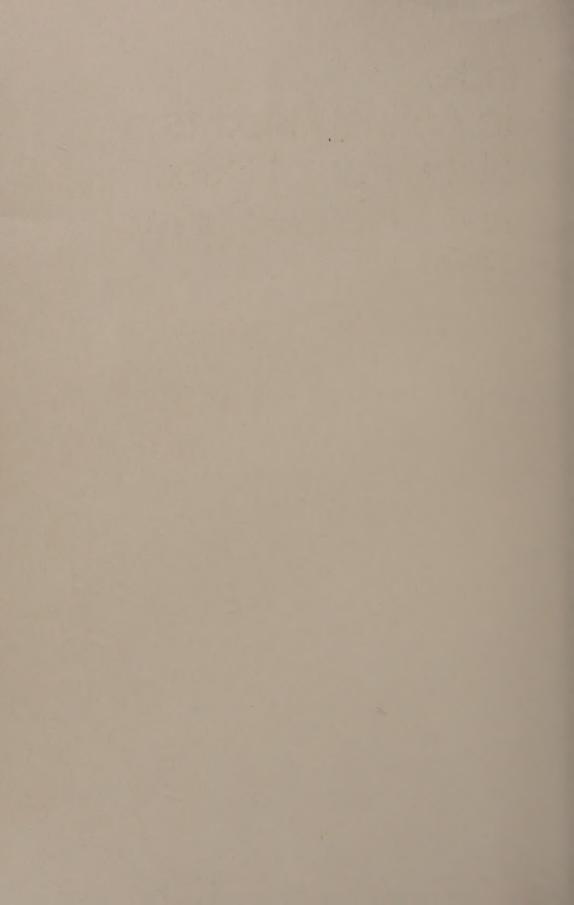
## Index to Annual Reports of the Forest Insect and Disease Survey 1965-1972

Compiled by
W. J. Miller
Great Lakes Forest Research Centre
Sault Ste. Marie, Ontario





## **INDEX**

to

Annual Reports

of the

## FOREST INSECT

and

## DISEASE SURVEY

Compiled by W. J. Miller Great Lakes Forest Research Centre Sault Ste. Marie, Ontario

1965-1972

Canadian Forestry Service Department of the Environment Ottawa, Ontario. 1975

Issued under the Authority of the Minister,
Environment Canada

© INFORMATION CANADA Cat. No.: Fo 23-16/1972 Ottawa, 1975 Abgralaspis ithacae Adelges lariciatus **'67-**63 **'65-**72 **'66-**98 **'67-**80 **'68-**84, 103 **'69-**76 Abiotic damage **'71-**68 72-67 Adelges nusslini **'65-**102 Acantholyda maculiventris '69-44 Adelges oregonensis **'65-**102 Acanthostigma parasiticum 70-46 Adelges piceae '**65-**9, 19, 34, 94 '**66-**10, 20, 35, 109 Aceria neoessigi **'67-**10, 19, 36, 111 **'68-**11, 20, 36, **'65-**85 114 '69-11, 22, 39, 101 '70-12, 21, Aceria parapopuli 41, 80 '71-12, 21, 44, 84 '72-12, 21, **'65-72 '66-80 '67-79 '68-80, 103** 43, 87 **'69-**75 **'71-62**, 75 Aegeriidae Acleris gloverana '**68-**103 **'71-82** '72-82 Agathis sp. Acleris variana 68-115 '**65-**9, 24, 57, 69, 85, 97 '**66-**11, 24, Agathis pumila 40, 64, 78, 108, 110 '67-11, 12, 24, **'65-**51 **'66-**62 '**69-**24, 60, 61, 102 38, 63, 80, 100, 109 '**68-**13, 24, 42, '70-81 '71-85 63, 84, 102, 113 '69-14, 26, 44, 63, 76, 88, 100, 107 '**70-**14, 24, 41, 79 Agrilus granulatus **'71-**13, 26, 44, 81 **'72-**12, 25, 43 **'65-**84, 88 Acrididae Agrypon flaveolatum **'65-**20 '67-101 Acrobasis betulella Alder flea beetle '65-24 '66-24 '67-24 '68-24, 118 **'65-**38 **'69-**26, 105 **'70-**24 Acronicta spp. '68-80 Alder woolly sawfly '65-72 70-57 Acronicta dactylina Aleurodiscus oakesi **'65-**72 **'66-**80 '67-47 Acronicta fragilis Allegheny spruce beetle '65-72 '69-89 Acronicta grisea **'65-**72 '66-80 Alpine fir mortality **'65-**103 **'66-**119 **'67-**117 Acronicta innotata Alsophila pometaria 65-72 **'66-**80 **'65-**20, 56, 71 **'66-**21, 39, 64, 78, 100 Actia interrupta **'67-**20, 40, 62, 78, 101 **'68-**21, 39, '65-50 59, 81, 103 '**69-**23, 42, 63, 76 '**70-**22, 40, 69 '**71-**26, 38, 75 '**72-**25, 38, Adelges cooleyi '65-85 '66-40, 98, 115 '67-101, 116 60, 75 '68-103, 116 '69-76, 88, 103 '70-Alternaria spp. 80 '71-86 '72-88 71-68 Adelges gall aphid Alternaria tenuis '68-122 '70-63

**'66-**98

**'67-**80

Altica spp. '65-102 '66-116 '67-105 '70-87 '71-86 '72-88  Altica ambiens alni '65-24 '66-24 '67-24 '68-24, 118 '69-26 '70-24  Altica plicipennis	Anisota virginiensis '68-84 '71-62 '72-43, 61  Anoplonyx spp. '65-72 '66-40  Anoplonyx canadensis '65-72
'66-80  Altica populi '67-81 '68-65 '69-63, 76  Ambermarked birch leaf miner	Anoplonyx luteipes '65-11, 72 '66-12, 40, 81 '67-12 '68-13, 84 '69-14 '70-14 '71-14 '72-14
'65-37, 54 '66-25, 34, 38, 62 '67-25, 38, 62 '68-38, 64 '69-42, 64 '70-37, 57, 70 '71-46, 63 '72-62 Ambrosia beetle	Anthracnose '66-13, 27, 30 '71-16 — of ash — of beech '65-26, 42 '67-26 '67-26
'65-57, 102 '68-104, 117 '69-104 '70-81, 85 '71-84 '72-86, 90 Ambrosia fungus	- of hardwoods '72-28, 29 - of maple '65-13, 26, 42 '67-14, 26 '68-15, 29
' <b>65-</b> 106, 107 Ambrosiella sulcati ' <b>70-</b> 85	'69-32, 50 — of oak '65-26  Aoplus velox
American aspen beetle '65-70, 85 '66-79, 99 '67-79, 101 '68-82, 102 '69-74, 88 '70-70 '71- 76 '72-61, 76	'70-12 Apanteles sp. '65-100 '70-12
Anacampsis innocuella ' <b>65-</b> 11	Apanteles solitarius ' <b>70-</b> 23
Amphipyra pyramidoides ' <b>68-</b> 42	Apechthis ontario '70-12
Anathix puta ' <b>67-</b> 41 ' <b>68-</b> 42	Aphelia alleniana ' <b>66-</b> 115
Anchylopera discigerana ' <b>70-</b> 57 ' <b>71-</b> 62	Aphidecta obliterata '67-19
Animal damage '65-39 '66-42 '67-43 '68-28, 44 '69-31, 46 '70-45, 75 '71-27, 50, 89 '72-27, 50  Anisota finlaysoni	Aphidoletes thompsoni '66-110  Aphids '66-40, 98 '71-75 — on Manitoba maple '67-100 — on poplar  '67-100
'70-57 '71-62 '72-60  Anisota rubicunda '65-57 '68-59 '69-44 '70-38, 55 '71-26, 43, 44, 60 '72-25, 42, 59	— on white elm '67-100  Aphrophora parallela '65-57 '66-64 '67-63 '68-64 '69-63 '70-57 '71-26, 60 '72-25, 61
Anisota senatoria ' <b>67-</b> 63	Apiognomonia errabunda ' <b>65-</b> 76 ' <b>66-</b> 85

Apioporthe apiospora Archips negundana **'65-**62 **'67-**81 '**68-**83, 85 **'70-**69 Apiosporina collinsii Archips rosaceana (see also Choristo-'66-89 '67-91 '68-91 '69-93 '70neura rosaceana) 76 '71-80 772-81 **'66-4**0 '67-41 Apiosporina morbosa Arge spp. **'69-**17, 31 **'70-**16 **'71-**16 '72-29 **'65-**72 '**66-**81 Apple scab Arge clavicornis 65-43 **'65-**72 **'66-**81 **'68-**84 Arborvitae leaf miner Arge pectoralis **'66-40** 65-72 **'66-**24, 81 **'67-**24, 63, 81 Arceuthobium spp. '68-24 '69-61 **'70-**82 '**71-**86 '**72-**88 Argyresthia aureoargentella Arceuthobium americanum '65-24, 54 '66-24, 63 '67-24, 61 **'65-**85 **'66-**87, 102 **'67-**65, 104, 120 **'68-**90, 106, 107 **'69-**67, 92, 105 '**68-**24, 63 '**69-**27, 41, 62 '**70-**24, 35, 56 '**71-**26, 44, 61 '**72-**25, 43, 59 '**70-**61, 72, 83 '**71-**69, 78, 86, 87 Argyresthia canadensis **'72-**68, 79, 88, 89 **'72-**43, 59 Arceuthobium campylopodum Argyresthia freyella **'67-**120 **'65-**24, 54 '**66-**24, 63 '**67-**24, 61 Arceuthobium campylopodum f. '**68-**24, 63 '**69-**27, 40, 62 '**70-**24, tsugensis '**71-**26, 44, 61 '**72-**25, 59 **'67-**120 **'68-**119 **'69-**105, 108 **'70-**Argyresthia oreasella 72-61 Arceuthobium douglasii Argyresthia thuiella '66-119 '**69-**105 **'65-**24, 55 **'66-**24, 40, 63 **'67-**24, 61 Arceuthobium f. laricis '**68-**24, 40, 63 '**69-**27, 40, 62 '**70-**24, '69-105 '70-85 '**71-**26, 44, 61 '**72-**25, 43, 59 Arceuthobium laricis Armillaria mellea 71-89 **'72-**89 '**65-**12, 29, 40, 61, 86, 88, 97, 104 '66-13, 43, 71, 89, 102 '67-13, 28, Arceuthobium pusillum 44, 91, 104, 117 '68-14, 28, 44, 72, **'65-**13, 28, 62 **'66-**13, 29, 69, 87 106, 122 '**69-**15, 49, 70, 91, 93 '**70-**'67-14, 27, 44, 65 '68-69, 90 '69-27, 44, 63, 73, 75 '**71-**15, 29, 47, 66, 31, 49, 67, 70 '70-61, 62, 72 '71-69 '**72-**29, 47, 64, 65, 79 '**72-**29, 68 Armillaria root rot Arceuthobium tsugense **'65-**12, 29, 61, 86, 104 **'66-**9, 13, 44, **'72-**89 71, 102, 118 **'67-**13, 28, 104 **'68-**14, 28, 44, 100 **'69-**15, 91, 93 **'70-**27, Archips cerasivoranus **'65-**24, 36, 57, 72 **'66-**24, 38, 81, 98 44, 63, 73, 75 '**71-**11, 12, 15, 29 '67-23, 40, 81, 101, 116 '68-24, 41,

Ascocalyx abietis

Ascocybe grovesii

**'65-106** 

**'66-**87 **'67-**85

84, 103 '69-26, 42, 76, 88, 105 '70-

24, 39 '71-26, 43, 75 '72-25, 43, 75

Archips fervidanus

'69-27 '70-75

**'68-**91 **'69-**81

Ascoconidium tsugae **'66-**120 Ash flower blister mite '66-41 Ash rust '65-27 '66-27 '67-26 '68-29 '69-32 '**70-**28 '**72-**30 Aspen blotch miner **'65-**55, 70 **'66-**62, 80 **'67-**42, 62, 80 **'68-**64, 83 **'69-**77 **'72-**60, 77 Aspen defoliators '**70-**52 '**71-**40 '**72-**37 Aspen blotch miner **'71-63 '72-88** Aspen leaf beetle '65-70 '66-79 '67-81 '68-84 '69-77 '71-86 Aspen leaf miner **'65-**74, 84, 101 **'66-**12, 41, 80, 99, 115 **'67-**13, 24, 42, 82, 99, 115 **'68-**43, 86, 104, 117 **'69-**103 **'71-**86 Aspen petiole miner (borer) '67-40, 62 '68-41, 66 '69-44 '71-44, 75 Aspen webworm **'65-**74 **'66-**83 Asterina sp. **'70-**85 Asterosporium hoffmani **'65-**62 **'66-**86 Atichia glomerulosa **'69-**50 Atopospora betulina '**68-**74 '**69-**93 Atropellis canker of pine '65-86 '66-102 '67-117 '68-106, 119 **'69-**91 **'70-**73, 83 **'71-**78 **'72-**81 Atropellis piniphila **'65-**77, 86 **'66-**102 **'67-**91, 117 '68-106, 119 '69-91, 93 '70-73, 83 '71-78 '72-81

Aureobasidium pullulans '**66**-42 '**67**-46, 70 '**69**-69 Bacillus sp. **'71-**43 Bacterial disease **'72-**80 Badebecia urticana **'68-**84 **'69-**70 Bagworm 66-12 **'67-**13 Balsam fir decline 69-48 **'72-**49 Balsam fir sawfly '65-10, 23, 53, 71 '66-9, 11, 23, 41, 61, 77, 100 '67-11, 22, 39, 59, 80 '**68-**13, 23, 37, 61, 85 '**69-**15, 25, 39, 60, 78 '70-13, 23, 41, 54 '71-13, 26, 37, 38, 55, 59 '**72-**13, 26, 40, 62 Balsam gall midge '65-19 '66-18, 20, 32, 40 '67-19, 41 '68-18, 20 '69-22, 45 '70-21, 41 '**71-**22, 44 '**72-**21, 43 Balsam poplar blotchminer Balsam seed chalchid 68-41 Balsam shootboring sawfly '65-25, 57 '66-25, 62, 116 '67-25 '68-25 '69-28, 90 '70-25 '71-26 Balsam twig aphid '65-12, 25, 38 '66-25, 41 '67-24, 42 '68-25, 118 '69-27 '70-14, 24 '71-14, 26 '72-15, 26, 39 Balsam woolly aphid '65-9, 10, 12, 15, 19, 34, 94, 108 '66-9, 10, 13, 18, 20, 34, 35, 49, 108, 109 **'67-**10, 19, 36, 111 **'68-**11, 20, 36, 114, 115 **'69-**11, 15, 16, 22, 39, 101 '70-12, 15, 21, 41, 80 '71-12, 15, 21, 44, 84 **'72-**12, 21, 43, 87 Barbara colfaxiana

'65-100 '66-114, 116 '67-115 '68-

117 '**70-**80 '**71-**85 '**72-**87

Atropellis treleasei

'66-121

Bark beetles Birch leaf beetle '**66-**44, 108 '**67-**60, 66, 101, 119 **'67-**20, 38, 57, 64 **'68-**66 '**68-**104, 121 '**69-**89, 90, 93 Birch leaf folder Bark blister **'65-**57 **'70-**57 **'71-**62 '67-91 Birch leaf miner Bark cracking **'65-**11, 21, 37, 53 **'66-**18, 21, 60, 98 **'65-**38 **'69-**46 '**67-**20, 38, 57, 64 '**68-**21, 38, 64, 66 Basswood and maple leaf roller **'69-**15, 23, 42, 61, 64 **'70-**14, 22, 37, 72-61 56, 57 '**71-**14, 23, 42, 60, 63 '**72-**14, Beauveria sp. 22, 41, 58 **'67-**62 **'70-80** Birch leaf-mining sawfly Beech bark disease **'65-**11, 24 **'66-**25 **'67-**13 **'68-**38 **'65-**26 **'66-**26 **'67-**26, 46 '68-29 **'69-42 '69-**28 71-48 **'72-**30 Birch leaf roller Beech decline **'66-**65 **'67-**64 **'71-**67 Birch sawfly Beech leaf tier '**66-**24, 59 **'67-**24, 59, 63, 65, 81 **'67-25** '**68-**24, 65 '**69-**61 Beech scale Birch scale **'65-**25, 26, 36, 39 **'66-**26, 34, 39, 43 **'65-**25 **'71-**63 '67-46 '68-41 '69-41 '70-39 '71-Birch skeletonizer '**65-**23, 37, 55, 71 '**66-**24, 34, 40, 64, Beech scale, Nectria complex 81 '67-23, 41, 63, 101 '68-25, 42, '**71-**67 '**72-**46 65, 84, 103 '69-44, 61, 76 '70-37, Besma endropiaria 53, 70 '**71-**14, 40, 42, 57, 75 '**72-**14, '68-59 40, 57, 75 Biatorella resinae Birch tube maker '66-89 '70-71 **'65-**38 Bifusella crepidiformis Biston cognataria '**66-**71, 88, 101 **'65-**29, 87, 88 **'65-**72 **'66-**40, 81 **'67-**81 Bifusella faullii Blackheaded ash sawfly '**65-**12, 29, 62 '66-29 **'67-**13 Bifusella linearis Blackheaded budworm **'66-**101 **'68-**107, 123 **'70-**73 **'65-**9, 10, 15, 24, 57, 69, 85, 97, 108 Bifusella saccata '**66-**9, 11, 24, 40, 64, 78, 108, 110, 122 **'68-**123 **'67-**11, 12, 24, 38, 63, 80, 100, 109 **'68-**13, 24, 42, 63, 84, 102, 113, 114 Birch casebearer **'69-**14, 26, 44, 63, 76, 88, 100, 107 **'66-**9, 11, 22, 34, 38 **'65-**11, 21, 37 '**70-**14, 24, 41, 79 '**71-**13, 26, 44, 81, **'67-**12, 21, 38 **'68-**13, 21, 38 **'69-**82, 91 '**72-**11, 12, 25, 43 14, 23, 41 '70-13, 22, 36 '71-13, 14, 18. 23. 39 '**72-**14, 22, 38, 39, 41 Blackheaded jack pine sawfly **'65-**38, 53 **'66-**41, 65 **'67-**42, 58

Birch dieback

**'66-**43

'**68**-60 '**69**-60 '**71**-58, 59

Botryosphaeria picea Black knot of cherry **'65-106** '65-14, 28, 42, 62 '66-9, 14, 28, 71 '**69-**17, 31 **'67-**28, 71, 91 **'68-**15 Botryosphaeria quercuum '**70-**16 '**71-**16 '**72-**29 '68-75, 76 Black knot of plum Botryosphaeria tsugae '65-62 '66-71 **'68-120** Black mould Botrvtis sp. **'68-**120 70-85 Black pineleaf scale Botrytis cinerea **'65-102** '66-120 '67-47, 120 '70-27 '72-Black mildew 50, 69 70-85 Bourletiella hortensis Black rib of willow 71-86 '67-47, 86 '68-88, 107 '69-80 '70-Boxelder blight 46 '71-79 **'67-70** Blight Boxelder gall midge **'66-**71 **'72-**92 '66-83 Blight (?) of cedar Boxelder leaf roller **'65-**106 **'68-**85 '69-77 Blister rusts Boxelder twig borer '**72-**29, 46 **'68-**119 **'65-**74 **'66-**83 **'67-**82, 102 **'68-**86 Blister rusts of lodgepole pine Brachylomia populi '67-117 '68-103 Blondelia eufitchiae Brachyrhinus ovatus **'70-12** '66-64, 97 '70-14 Blotch miner Branch decay **'66-**116 **'67-**80, 115 66-72 Blotch miner on cottonwood Branch dieback '66-72 **'69-**104 — on poplars and willow '66-80 Branch galls '65-89 '67-83 Blue stain '66-46 '68-48, 50 Brown cubical pocket rot **'66-**44, 104 **'72-**50 Borrelinavirus bruceata Brown cubical top rot **'71-**38, 39 **'72-**38 **'66-**104 Borrelinavirus hercyniae Brown felt blight **'71-42 '66-**104 '**69-**108 Bothrodiscus berenice Brown leaf blotch '68-75 '66-120 Bothrodiscus pinicola Brown spot needle blight **'67-**85 **'68-**75 Botryodiplodia sp. Brown spot needle blight of pine **'69-**50 **'70-**62 '65-77

Brown stain of hemlock '65-103	Camarosporium salicinum '66-87
Browning of cedar '65-41	Camarosporium strobilinum '69-108
Bruce spanworm '65-21, 38, 56, 73, 85 '66-18, 21, 39,	Campaea perlata '65-72 '66-12, 81 '67-12 '68-84
63, 83 <b>'67-</b> 24, 39, 64, 82, 102 <b>'68-</b> 25, 39, 40, 86, 101, 118 <b>'69-</b> 27, 43, 87 <b>'70-</b> 25, 38, 68, 69 <b>'71-</b> 26, 38, 39,	Campoplex sp. '71-14 '72-14 Cankers
52, 76 ' <b>72-</b> 26, 38	' <b>69-</b> 65
Brunchorstia sp. '68-123	Canker and blue stain '70-86
Bucculatrix ainsliella '66-40 '67-41 '68-65 '69-63	Cankers and dieback '68-75 '69-68 '70-86 '72-69, 70,
Bucculatrix canadensisella '65-23, 37, 55, 71 '66-24, 40, 64, 81	91 — of elm ' <b>65-</b> 14
<b>'67-</b> 23, 41, 63, 101 <b>'68-</b> 25, 42, 65,	— of maple ' <b>65-</b> 14 Canker of alder
84, 103 ' <b>69</b> -44, 61, 76 ' <b>70</b> -37, 53, 69 ' <b>71</b> -14, 40, 57, 75 ' <b>72</b> -14, 40, 57,	' <b>66-</b> 84, 104 ' <b>68-</b> 49
75	— of alpine fir ' <b>66-</b> 120
Bud necrosis	— of aspen ' <b>65-</b> 42, 78
' <b>69-</b> 108 ' <b>72-</b> 91	<b>'67-</b> 46, 105
Butt rots	' <b>70-</b> 63, 73
' <b>65-</b> 40, 61 ' <b>66-</b> 34, 44, 70	' <b>71-</b> 69, 78 ' <b>72-</b> 29, 49
Calcarisporium arbusculum	— of basswood ' <b>69-</b> 50, 68, 69
' <b>68-</b> 91	<b>772-</b> 30
Caliciopsis sp.	— of beech '66-23, 43
' <b>72-</b> 91	<b>'71-</b> 69
Caliciopsis calicioides	— of birch '66-84 '68-49 '70-46
' <b>65-</b> 77 ' <b>67-</b> 91	49 ' <b>70-</b> 46 ' <b>71-</b> 50
Caliroa cerasi	— of cedar '66-42 '68-
' <b>65-</b> 38 ' <b>66-</b> 98 ' <b>67-</b> 101	50
Caliroa fasciata	— of cherry ' <b>66-</b> 49, 50
' <b>66-</b> 40	— of Chinese elm '66-43
Calligrapha alni	— of crab apple ' <b>72-</b> 29
′ <b>68-</b> 84	— of dogwood ' <b>68-</b> 49 ' <b>72-</b>
Calligrapha verrucosa '68-89 '68-103	— of Douglas-fir '66-121 '67-
	120 ' <b>68-</b> 120, 123
Camarosporium caraganae	— of fir '65-39 '67-
' <b>67-</b> 85 ' <b>68-</b> 88	14, 49 '68-
Camarosporium elaeagnellum	46, 49, 50, 124
′ <b>68-</b> 91	<b>'69-</b> 47, 48
Camarosporium robiniae	' <b>70-</b> 43, 45, 86
' <b>68-</b> 76 ' <b>69-</b> 68	′ <b>71-</b> 47

<ul><li>of hazel nut</li><li>of hemlock</li></ul>	' <b>66-</b> 84 ' <b>68-</b> 50	— of western hemlock ' <b>66-</b> 121 ' <b>67-</b> 120 ' <b>68-</b> 120,
— of holly	<b>'69-</b> 50	— of willow '65-78, 106
— of larch	<b>'66-</b> 47 <b>'68-</b> 50	' <b>66-</b> 43 ' <b>67-</b>
— of laurel	' <b>65-</b> 42	120 '68-28,
— of Manitoba maple		50, 107 ' <b>70-</b>
— of maple	' <b>67-</b> 48, 73,	28
	120 <b>'68-</b> 48,	— of yew ' <b>69-</b> 49
	49 <b>'69-</b> 66 <b>'70-</b> 46 <b>'71-</b>	Caragana leaf blight '71-79
	69 ' <b>72-</b> 30	
— of mountain-ash	' <b>71-</b> 70 ' <b>72-</b>	Caragana plant bug '65-73 '66-82 '67-82 '68-85
of oals	' <b>70-</b> 63 ' <b>71-</b>	Caripeta divisata
— of oak	69 ' <b>72-</b> 50	' <b>66-</b> 40 ' <b>67-</b> 41
— of pine	<b>'65-</b> 77, 106,	Casebearer
or pine	107 <b>'66-</b> 46,	' <b>72-</b> 25
	51, 66, 67, 70, 72, 74, 102	Casebearer on aspen '68-25
	<b>'67-</b> 48, 49,	Catenularia sp.
	91, 120 '68-	' <b>70-</b> 62
	45, 49, 50, 68,	Catkin blister
	106, 107, 120 <b>'69-</b> 50, 66,	' <b>72-</b> 51
	93, 108 ' <b>70-</b>	Catkin hypertrophy
	46, 59, 60, 61,	' <b>65-</b> 14, 30 ' <b>66-</b> 14, 30 ' <b>67-</b> 29, 92
	63, 64 '71-	Catkin hypertrophy of alder
	45, 46, 64, 65,	<b>'68-</b> 93
of nonlar	70, 90 <b>'66-</b> 27, 42, 43,	Caulocampus acericaulis '66-64
— of poplar	71, 84 '67-46,	
	83, 84, 105	<i>Cecidomyia</i> sp. ' <b>71-</b> 44
	<b>'68-</b> 28, 45, 49,	Cecidomyia banksianae
	50, 87, 88, 106	' <b>68-</b> 42
	' <b>69-</b> 65, 68, 92 ' <b>70-</b> 27	Cecidomyia negundinis
— of Russian-olive	' <b>66-</b> 108	' <b>66-</b> 81
— of spruce	' <b>65-</b> 76, 106	Cecidomyia ocellaris
	' <b>66-</b> 72 ' <b>67-</b>	' <b>66-</b> 40 ' <b>67-</b> 41
	71, 120 '68-	Cecidomyia pinifoliae
	45, 46, 48, 50, 71 ' <b>69-</b> 48.	' <b>71-</b> 60 ' <b>72-</b> 61
	71 <b>'69-</b> 48, 50, 79 <b>'70-</b> 45	Cecidomyia reeksi
	<b>'71-</b> 69	' <b>65-</b> 57 ' <b>66-</b> 64 ' <b>67-</b> 63 ' <b>68-</b> 42 ' <b>71-</b>
— of sumac	<b>'68-</b> 49	44 ' <b>72-</b> 61
— of tamarack	<b>'69-</b> 49 <b>'70-</b>	Cecidomyid on Scots pine
	64	' <b>72-</b> 41

Cecidomyidae Ceratocystis pilifera '**68-**117 '**69-**44, 63 '**70-**41, 57 '**71-'70-**46 Ceratocystis ulmi Cedar and juniper sawflies '**65-**26, 59 '**66-**26, 65 '**67-**25, 66 **'67-**59 **'68-**26, 44, 73, 87 **'69-**30, 67 **'70-**26, 45, 62 '**71-**28, 48, 65 '**72-**27, 48, Cedar leaf blight **'70-**85 62, 81 Cedar leaf miners Cercoseptoria vermiformis **'65-**24, 55 **'66-**24, 63 **'67-**24, 61 '**66-**120 '**68-**24, 40, 63 '**69-**27, 40, 62 '**70-**Cercospora antipus 24, 35 '**71-**26, 44, 61 '**72-**25, 43, 59 **'66-**85 Cenangium abietis Cercospora microspora '**68-**48, 74, 76 '**69-**68 '**71-**69 '**72-'71-**29 Cercospora populina Cenangium atropurpureum '**65-**76 '67-70 Cercospora salicina Cenangium sp. prob. ferruginosum '**68-**15 Cercospora sequoiae var. juniperi Cenangium furfuraceum '**65-**76 **'65-**88 Ceuthospora phacidioides Cenangium pithyum **'65-77 '65-**106 Ceuthospora pithyophila Cenangium populneum **'66-**89 '**69-**31 Chaetoscutula sp. Cenopis pettitana **'66-**46 **'66-**23, 40 **'67-**23, 41 **'68-**24, 42 Chaetoscutula juniperi '**69-**26, 44, 63 '**70-**23, 41 '**71-**26 **'67-**89 '72-23, 24, 61 Chalcid parasites Cephaloascus fragans '68-60 **65-**106 Cherry blight Cephalosporium sp. '65-27 '66-28 '68-28 '69-31 '70-'**68-**26 **'65-**39 **'67-**46 27 **'71-**29 '**72-**29 Cephaloporium wilt **'65-**42 **'66-**46 Cherry shoot borer 72-61 Ceratocystis sp. '**66-**44, 89 Chestnut blight Ceratocystis dryocoetidis **'65-**63 **'65-**98 Chilocorus stigma Ceratocystis fagacearum **'71-42 '71-**68 Chionaspis lintneri Ceratocystis fimbriata '**68-**42 '**69-**45 **'67-**46 **'65-4**2 Chionodes obscurusella Ceratocystis major **'68-**65 **'71-**50 Chloridium sp. Ceratocystis minor **'66-**89 '**68-**48

Chlorosaypha sabince '65-88

Chlorosis '66-42, 70 '67-119

Chlorosis of red pine '65-39

Chlorosplenium aeruginascens '65-29

Chlorotic foliage '72-68

Choristoneura spp. '67-112 '69-100 '70-79 '71-82 '72-83

Choristoneura biennis
'67-101, 112 '68-103, 114 '69-89,
101 '70-69, 79 '71-75, 82 '72-83,
75

Choristoneura conflictana
'66-79, 97 '67-78, 99 '68-65, 80,
84, 101 '69-42, 61, 73, 87 '70-38,
40, 52, 68, 81 '71-40, 56, 74, 85
'72-23, 37, 56, 87, 75

Choristoneura fumiferana

'65-11, 18, 38, 49, 67, 82, 97 '66-12, 19, 36, 57, 77, 96, 112 '67-12, 18, 36, 52, 77, 98, 112 '68-13, 19, 37, 54, 81, 84, 99, 102, 114 '69-15, 21, 38, 53, 73, 77, 86, 100 '70-20, 49, 67, 79 '71-13, 20, 35, 54, 73, 82 '72-11, 20, 34, 54, 83, 74

Choristoneura lambertiana '67-101 '68-103 '69-89

Choristoneura occidentalis
'67-112 '68-114 '69-100 '70-79
'71-82, 86 '72-83

Choristoneura orae '69-100 '70-79 '71-82 '72-83

Choristoneura pinus pinus '65-50, 68 '66-57, 77 '67-40, 53, 77 '68-40, 56, 80 '69-40, 56, 74 '70-35, 51, 69 '71-26, 41, 56, 75 '72-20, 37, 56, 75

Choristoneura rosaceana (see also Ar chips rosaceana)
'66-81 '67-81 '68-42 '69-45, 76

Chrysocharis laricinella '69-24

*Chrysomela* spp. '66-99 '67-99 '68-102

Chrysomela aeneicollis '67-99 '68-102 '70-70

Chrysomela crotchi
'65-70 '67-81 '68-84 '69-77 '7175

Chrysomela falsa '65-11 '67-12 '68-13 '69-15 '70-14 '71-14 '72-14

Chrysomela scripta '65-85 '68-102 '69-77

Chrysomela semota '67-99 '68-102

Chrysomelid, A '68-84

Chrysomyxa spp. '65-86

Chrysomyxa arctostaphyli
'65-13, 28, 62, 77, 88 '66-30, 70, 103
'67-70, 91, 104 '68-47, 69, 91 '6970, 81 '70-63, 72 '71-69, 77 '7250, 69, 78

Chrysomyxa chiogenis '66-46' '67-90

Chrysomyxa complex '68-105

Chrysomyxa empetri
'65-86 '66-46, 89, 100, 103 '67-45, 90, 102

Chrysomyxa ledi
'65-13, 28, 41, 60, 76, 86 '66-13, 29, 45, 69, 89, 100, 103 '67-27, 45, 68, 90, 102 '68-28, 47, 69, 91 '69-30, 64, 80, 90 '70-27, 44, 58, 71 '71-29, 47, 65, 76 '72-15, 28, 47, 66, 89, 78

Chrysomyxa ledi var. cassandrae '67-90

Chrysomyxa ledicola
'65-13, 28, 41, 60, 76, 86, 88, 104
'66-13, 29, 45, 69, 88, 94, 100, 104
'67-14, 27, 45, 68, 90, 102, 118 '68-14, 28, 47, 68, 90, 105, 121 '69-17,

30, 48, 64, 80, 90 '**70-**16, 27, 44, 58, 71 '**71-**16, 29, 47, 65, 76 '**72-**15, 28, 46, 66, 89, 78

Chrysomyxa pirolata

'65-60, 77, 87 '66-30, 46, 70, 89, 102, 119 '67-68, 91, 103, 104 '68-28, 68, 105 '69-31, 70, 91 '70-63, 83 '71-77, 88 '72-29, 67

Chrysomyxa weirii
'65-63, 78, 105 '66-89, 100 '67-71,
102 '68-105 '69-93 '70-72 '7177, 89 '72-78

Chrysomyxa woroninii
'66-100, 104 '69-93 '70-72 '71-77
'72-78

Chrysopeleia ostryaella '**65-**57

Ciboria amentacea '67-91

*Ciborinia foliicola*'66-85 '67-47, 86 '68-88, 107 '69-80 '70-46 '71-79

Ciborinia pseudobifrons '65-87

*Ciborinia whetzelii*'65-13, 27, 29, 41, 59, 76, 87, 88, 105
'66-13, 28, 44, 68, 89, 103 '67-14, 28, 46, 66, 86, 103 '68-15, 28, 48, 67, 88, 105 '69-31, 49, 65, 80, 92, 106 '70-27, 45, 59, 73 '71-29, 48, 69, 78

Cicada, A '67-64

Cimbex americana '65-57 '66-81 '69-77

'**72-**16, 29, 47, 67, 80

*Cinara* sp. '**66-**98

Cinara curvipes '66-40

'68-107

Cladosporium sp. '65-86 '66-89, 104 '67-45, 104

'**69-**90, 94 '**70-**71, 72

Cladosporium herbarum '66-30 '72-91

Cladosporium macrocarpum '66-86

Cladosporium subsessile '68-74 '69-80

Cladosporium variabile '66-71 '70-63

Clearwinged moths '68-103

Climatic injury (damage)
'68-121 '69-93, 107 '70-42, 62, 75
'71-49, 79 '72-49, 79, 81

Climbing cutworm '65-73

Coccomyces hiemalis
'65-13, 29 '66-71 '67-87, 104 '6888 '70-76 '71-79 '72-29, 81

Coccomyces strobi '67-47, 71 '70-46

Coleophora sp. '**68-**25 '**72-**25

Coleophora anatipennella '65-38

Coleophora fuscedinella
'65-11, 21, 37 '66-11, 22, 38 '6712, 21, 38 '68-21, 38 '69-14, 23, 41
'70-13, 22, 36 '71-13, 23, 39 '7214, 22, 38, 41

Coleophora laricella

'65-12, 22, 51, 73, 102 '66-12, 22,
40, 62, 81, 108, 113 '67-12, 21, 39,
58, 113 '68-13, 22, 40, 61, 115 '6924, 43, 60, 77, 102 '70-22, 41, 57, 69,
81 '71-22, 43, 62, 84 '72-22, 43, 61,
87

Coleosporium asterum
'65-28, 60, 87, 88 '66-45, 69, 101
'67-45, 68, 91, 102 '68-28, 47, 68, 91
'69-31, 48, 65, 80 '70-44, 59, 72
'71-28, 29, 47, 65 '72-16, 28, 47, 66, 79, 89

Coleosporium campanulae '66-46

Coleosporium delicatulum '67-47

Coniophora puteana Coleosporium pinicola **'67-**120 **'71-**65 **'72-**64 **'66-**44. **'65-**63 **'66-**70 **'67-**68 Coniothyrium sp. Coleosporium viburni 72-91 **'66-**46 **'67-**47 Coniothyrium faullii Coleotechnites starki **'68-**74 **'69-**69 **'66-**100 **'67-**101 **'68-**103 **'69-**89 '**70-**70 '**71-**75 '**72-**75 Coniothyrium fuckelli '**66-**85, 89 Collar blight **'67-47** Coniothyrium olivaceum 66-86 Collembola **'71-**86 Conophthorus sp. **'66-**116 **'67-**116 Colletotrichum gloeosporioides **'65-**86 **'66-**102 **'68-**106 **'70-**72, 85 Conophthorus monticolae **72-**87 Commandra blister rust **'67-**90, 118 **'68-**90, 119 **'65-**89 Conophthorus resinosae '69-90, 94 '70-59, 71 '71-64, 76 **'68-**25 **'72-**61 '**72-**77 Conoplea fusca Common blue butterfly 66-86 **'72-**89 Conoplea juniperi var. robusta Compsolechia niveopulvella 67-91 '**66-**100 Conoplea shaerica Cone and seed insects **'66-**87 '65-100 '66-114 '67-100, 115 '68-Contarinia spp. 102, 117 **'69-**104 **'70-**80 **'71-**85 '65-100 '66-114 '67-116 '68-**'72-**87 118 '**69-**105 '**70-**81 '**71-**60, 86 Cone beetle, A '**72-**87 **'66-**116 Contarinia baeri Cone rusts 72-41 **'66-**70 **'68-**53 **'69-**70 **'65-**60 Contarinia oregonensis — of fir **'66-**70 **'67-**69 **'68-'66-114 '70-**80 **'65-**100 **'71-**86 68 '**72-**87 - of hemlock '66-70 '67-69 '68-68 **'69-**32 **'71-**69 Cooley spruce gall aphid '**65-**77, 87 '**66-**30, 46. — of spruce **65-**85 **'66-**115 **'67-**101, 116 **'68-**70, 89, 102, 119 103, 116 '**69-**76, 88, 103 '**70-**80, 84 68, 91, 103, 104 '**68-'71-**86 **'72-**88 28, 105 '**69-**91 '**70-**Corky root disease 63, 83 **'71-**77, 88 '68-122 '71-87 '**72-**29 Conifer needle rusts Cordana pauciseptata **'69-**90 66-4 Conifer sawflies Cordyceps militaris **'65-**100 **'66-**114 70-80 Coniophora fusispora Cork bark disease of alpine fir

**70-**84

**'68-**123

Corky root of Douglas-fir Cronartium spp. '69-107 '70-84 **'67-**119 Corthylus punctatissimus Cronartium coleosporioides '**65-**57 '**68**-68 '**69**-31, 66, 90, 93 **'70-**27, 60, 63, 71 **'71-**64, 76 **'72-**Corticium galactinum 65, 77, 90 **'65-**40 **'66-**44 Cronartium comandrae Corticium laeve '**65-**40, 86, 89 '**66-**45, 89, 90, 102 **'65-4**2 **'67-**71, 90, 118 **'68-**47, 90, 106, 119 Corvne cylichnium **'69-**66, 90, 94 **'70-**59, 71 **'71-**45, **'67-47** 46, 64, 76 '**72-**65, 77 Corynespora olivacea Cronartium comptoniae '**67-**71 '**68-**76 '**65**-63, 86 '**66**-30, 70, 102 '**67**-45, Corvneum cinereum 67, 91 '**68-**27, 47, 69, 122 '**69-**66, **'65-**87 90 '70-44, 71 '71-29, 45, 65 '72-Coryneum kunzei 65, 66, 78 '**71-**69 '**72-**50, 69 Cronartium quercuum **'65-**30 **'67-**27 **'68-**68 **'69-**66, 69 Corvneum negundinis **'65-**63 Cronartium ribicola Corvneum rhoinum '**65-**14, 28, 42, 61 '**66-**13, 28, 45, 67, 104 '67-14, 27, 45, 67 '68-15, 45, 67-71 69, 106 '**69-**17, 47, 68, 94 '**70-**16, Coryneum thujinum 44, 63, 71 '71-46, 64 '72-29, 45, 46, **'67-**120 65, 66, 78, 90 Corythucha spp. Cronartium gloeosporioides **65-**57, 102 **'66-**116 '**70-**57 '71-45 Corvthucha heidemani Cronartium stalactiforme **'66-**24 **'65-**40 **'66-**44 **'67-**45 Corvthucha ulmi Crumenula laricina 72-61 '**68-**123 Cottonwood leaf beetle **'65-**85 **'66-**81 **'69-**77 Cryptococcus sp. **'66-**64 Cottonwood leafmining beetle **'68-**83 **'69-**78 '**70-**70 Cryptococcus fagi '**65-**26, 36 '**66-**26, 39 '**67-**26, 46 Cottony maple scale '**68-**41 '**69-**28, 41 '**70-**39 '**71-**42, **'67-**62 **'68-**64 **'69-**64 **'70-**58 48, 67 '**72-**46 Cremifania nigrocellulata **'66-**110 **'71-**12 Cryptodiaporthe sp. **'66-**43 Criconemoides curratum **'66-**46 Cryptodiaporthe aesculi Croesia semipurpurana **'65-**30 '**65-**24, 57 '**66-**25, 39, 64 '**67-**41, 63 Cryptodiaporthe apiculata '**68-**42, 64 '**69-**27, 45, 63 '**70-**24 **70-**85 '**71-**26, 44, 61 '**72-**25, 43, 60 Cryptodiaporthe populea Croesus latitarsus **'68-**28 **'69-**68 **'70-**27 **'67-**12

Cylindrocarpon sp. Cryptodiaporthe salicella '65-39 '66-43 '67-45 '68-27 '72-**70-**85 29 Cryptodiaporthe salicina Cylindrocarpon destructans **'66-**43, 71 **'68-**28 '**70-**28 **'71-**87 ′**70-**84 Cryptomyces maximus Cylindrocladium scoparium **'67-**91 **'68-**107 **'65-42 '66-46** Cryptorhynchus lapathi **'67-**116 **'68-**118 **'69-**90 Cylindrosporella sp. **'70-**82 **'67-**48, 87 **'71-**86 Cylindrosporella leptothyrioides Cryptosphaeria populina **'69-**94 **'65-**76 Cylindrosporella microperma Cryptospora sp. '**66-**42, 46 **'68-**48 Cylindrosporium betulae Cryptospora alnicola 65-13 '68-15 **'66-**86 Cylindrosporium fraxini Cryptospora aurantica **'66-**86 **'67-**87 Cryptospora betulae Cylindrosporium hiemalis **67-**104 '**68-**76 Cryptospora femoralis Cylindrosporium saximontaneuse **'66-**86 68-107 Cryptospora suffusa Cytilus alternatus '**65-**75 **67-**104 Cryptosporella paucispora Cytodiplospora aceris **'65-**63 **'67-**85 Cryptosporiopsis sp. Cytoplasmic polyhedrosis virus **'69-**79 **70-**23 Cryptosporiopsis cornina Cvtospora spp. **'65-**75 '65-39, 41, 42, 75, 105 '66-59 '67-46, 84, 89 '68-88 '69-68 '70-45, 46 Cryptosporiopsis scutellata **'71-**47 **'65-**75 Cytospora annulata Cryptosporium betulinum **'65-**75 **'69-**79 **'66-**86 Cytospora canker Cryptosporium pinicola **69-**93 **'70-**63 **'71-**46 **'72-**48 **'67-**47 - of poplar '65-78 Cull survey — of spruce '**65-**39, 41 **'70-**16 Cytospora chrysosperma Curcurbitaria caraganae **65-**78, 88, 89 **67-**46, 84 **68-**75, 87 **'67-**84 **'68-**88 **'69-**79 **'69-**65, 81 **'70-**63 **'72-**69 Curcubitaria pithyophila Cytospora friesii '**67-**71 '**72-**49 Cucurbitaria staphula Cytospora horrida

**'65-**75

**'67-**83 **'68-**87, 107 **'69-**94

Cytospora intermedia Davisomycella ampla **'70-**62 '**67-**44, 71, 89 '**68-**48, 68, 90 '**69-**31, 65, 80, 91 '**70-**28, 73 '**71-**65 Cytospora kunzei **'72-**69 **'65-**63 **'66-**72 **'67-**71 **'70-**63 Decay Cytospora occulata **'65-**107 **'66-**121 **'67-**72 **'71-**90 '**65-**75 Decay and stain of maple Cytospora pini **'70-**26 **'70-**63 Decline and mortality of Douglas-fir Cyzenis albicans 66-118 **'67-**117 **'65-**20 Decline of elm Dagger moths '**68-**87 **'65-72 '66-80** - of maple '71-49 Daedalea unicolor Deer 66-45 **'70-**75 Damping-off Delphinella abietis '**68-**27, 122 '**69-**108 '**70-**85 '**71-**87 '68-107 **'72-**29 Delphinella balsameae Darksided cutworm '65-106 '66-120 '68-15, 28 '69-**'68-**65 Darluca sp. Dendroctonus sp. '**65-**86 '**70-**75 Dendroctonus brevicomis Darluca filum 68-117 '**66-**100 '**72-**78 Dendroctonus murrayanae Dasineura abiesemia '**68-**103 '**69-**89 **'71-**86 Dendroctonus obesus Dasineura balsamicola **'65-**95 **'66-**111 **'67-**24, 101, 111 '65-19 '66-20, 40 '67-19, 41 '68-**'68-**99, 113 **'69-**27, 85, 98 **'70-**77 20 '69-22, 45 '70-21, 41 '71-22, 44 **'71-**82 **'72-**86 '**72-**21, 43 Dendroctonus piceaperda Dasineura communis **'67-**36 **'68-42** Dendroctonus ponderosae Dasineura rachiphaga '65-96 '66-111 '67-110 '68-104, '**71-**86 '**72-**87 112 '69-100 '70-78 '71-83 '72-84, 85 Dasyscyphus calyciformis Dendroctonus pseudotsugae **'66-**46 '65-96 '66-111, 118 '67-111 '68-Dasyscyphus pini 113 **'69-**99 **'70-**78 **'71-**83 '**65-**106 Dendroctonus punctatus **'67-**101 **'69-**89 Datana integerrima **'66-**99 '66-64 '67-63 '68-59 '69-63 '72-Dendroctonus rufipennis 61 '**70**-69, 77 '**71**-74 '**72**-25, 43, 76, 86 Dendroctonus simplex Datana ministra '65-85 '67-101 '68-104 '69-89 **'67-**63, 116 **'68-**59 **'69-**77 **'72-**61

Dendroctonus valens '71-88	<i>Diaporthe</i> sp. ' <b>65-</b> 75 ' <b>66-</b> 43 ' <b>69-</b> 50
Dendrophoma pulvis-pyrius '67-48	Diaporthe alleghaniensis ' <b>68-</b> 76
Dendrostilbella presinula ' <b>66-</b> 89	Diaporthe beckhausii ' <b>66-</b> 86
<i>Dermea</i> sp. ' <b>65-</b> 105	Diaporthe dubia ' <b>70-</b> 46
Dermea acerina ' <b>67-</b> 48	Diaporthe eres '65-63
Dermea ariae ' <b>68-</b> 91	Diaporthe fagi ' <b>65-</b> 63
Dermea balsamea '65-13 '66-42 '69-48 '72-49	Diaporthe lokoyae '68-123 '70-85 '71-88 '72-91
Dermea bicolor ' <b>66-</b> 87 ' <b>67-</b> 86	Diaporthe tessella ' <b>66-</b> 87
Dermea cerasi ' <b>66-</b> 87 ' <b>67-</b> 85	Diatrype disciformis '65-75
Dermea peckiana ' <b>69-</b> 50	Diatrypella favacea ' <b>68-</b> 76 ' <b>71-</b> 50
Dermea piceina ' <b>68-</b> 48	Dibotryon morbosum '65-14, 28, 42, 62 '66-14, 28, 71, 89 '67-28, 71, 91 '68-15
Dermea pinicola ' <b>65-</b> 42	Dichelonyx sp. '65-102
Dermea pseudotsugae '67-120 '71-88	Dichelonyx backi '66-100
Dermea rhytidiformans ' <b>70-</b> 76, 84	Dichomera gemmicola
Dermea tulasnei ' <b>67-</b> 48	Dichomeris marginella '65-102 '66-116 '67-116
Deterioration of balsam fir '72-15	Didymascella thujina '66-46, 71 '67-120 '70-85
— of birch '67-65 '68-73 '65-40, 58 '66-45, 68 '67-65 '68-73	Didymosphaeria oregonensis ' <b>65-</b> 89
— of pine '68-73 — of seedlings '71-68 — of trees '69-16, 31 '70-15	Dieback '65-75 '66-75, 86, 108 '67-83, 84, 85, 86 '69-31, 68, 69, 79 '72-68, 91, 92
'71-15  Deuteronomos magnarius '71-44	— of alder '65-75 — of alpine fir '71-89 — of ash '68-93
Diapheromera femorata ' <b>68-</b> 65	— of aspen — of balsam fir — o

71-50, 80  — of broadleaf maple '65-103 — of caragana '68-88 — of cedar '70-85 — of dogwood '65-78 — of Douglas-fir '68-81.23 '69-109 — of larch '67-73 , 83 '70-64 — of fir '69-81, 109 — of maple '67-73 '68-19, 93 '70-28 — of mountain-ash '68-91 '71-70 — of pine '67-70, 119 — of pine '67-70, 119 — of poplar '69-31 — of spruce '68-121 '69-81 '70-46, 84 '71-69 — of tamarack '70-64 — of tamarack '70-64 — of tamarack '70-64 — of tamarack '70-64 — of western hemlock '68-120, 123 '69-109 — of willow '65-75 '68-92 '70-46, 85 Dieback and canker diseases '65-105 '66-42 Dieback and canker diseases of Douglas-fir '67-18 Dimeriella balsamicola '67-48 Dimerosporium abietis '67-104 Dimorphopteryx sp.  '68-82 Dioryctria abietivorella '67-115 '70-80 '71-86 '72-2 Dioryctria abietivorella '66-116 Dioryctria auranticella '66-116 Dioryctria reniculella '65-73 '66-81 '67-61, 81, 101 (65, 84, 102 '69-27, 45, 77 '70' '71-26, 44 '72-21 Dioryctria auranticella '66-116 Dioryctria reniculella '66-116 Dioryctria auranticella '66-116 Dioryctria zummermani '66-81 '67-63, '86-81 '67-64, 81, 101 (65, 84, 102 '69-27, 45, 77 '70' '71-26, 44 '72-21 Dioryctria auranticella '66-116 Cis-57 '66-81 '67-63, '86-61 '67-63, '86-61 '67-63, '86-61 '67-63, '86-61 '67-63, '87-81 Dioryctria auranticella '66-116 Dioryctria auranticella '66-116 Dioryctria auranticella '66-116 Cis-57 '66-81 '67-63, '86-61 '67-63, '86-61 '67-63, '87-81 Dioryctria auranticella '66-116 Cis-57 '66-84 '67-61, 81, 101 Cis-57 '66-64 '67-61 '68-6 Dioryctria auranticella '66-116 Cis-5	— of beech	<b>67-</b> 71 <b>71-</b> 69	<i>Dimorphopteryx pinguis</i> <b>'66-</b> 59, 116 <b>'67-</b> 59
- of caragana	'	<b>71-</b> 50, 80	
	— of caragana	<b>68-</b> 88	
- of dogwood			
- of Douglas-fir			
- of elm '67-73, 83 '70-64 '69-81, 109 -65-107 '65-107 -67-73 '68-91, 93 '70-28 '71-69 -69 end of oak '70-63 '71-69 '72-50 -0 of pine '67-70, 119 '68-74, 123 '70-63, 64 '71-70 -63, 64 '71-70 -63, 64 '71-70 -63 end of spruce '66-121 '69-81 '70-64 -0 of western hemlock '68-120, 123 '69-109 -0 of willow '65-75 '68-92 '70-46, 85 '70-64 -0 of western hemlock '68-120, 123 '69-109 -0 of willow '65-75 '68-92 '70-46, 85 '70-64 -0 of western diseases '65-105 '66-42 Dieback and canker diseases '65-105 '66-42 Dieback and canker diseases '67-118 '67-118 '69-15, 25, 43, 63, 77 '70-14, 23 '69-104 Dimerosporium abietis '67-104 Dimorphopteryx sp.  Dimorphopteryx sp.  Diof fir (67-63 '67-63 '67-63 '68-81 '67-61, 81, 101 '65-63 '66-81 '65-73 '66-64 '67-61, 81, 101 '65-73 '66-81 '67-12, 21, 45, 77 '70 '71-25, 44, 772-21 Dioryctria zimmermani '65-57 '66-64 '67-61 '68-6 Diplodia sp. '66-43, 112 Diplodia fraxini '67-84 '71-70 Diplodia melaena '69-31 '67-84 '71-69 Diplodia pinea '69-50 Diplodia tumefaciens '65-78 '67-83 '68-87, 107 '68 '72-81 Diplodia salicicola '70-46 '72-81 Diplodia salicicola '70-46, 85 Diprion frutetorum '66-40 '67-41, 63 '68-42, 61 45, 63 '71-62 '72-58 Diprion hercyniae '65-12, 23, 36, 52 '66-11, 23, 38 '67-12, 22, 40, 57 '68-13, 23, 40 '69-15, 25, 43, 63, 77 '70-14, 23 '57, 70 '71-13, 23, 42 '72-13, 30 Diprion similis '67-104 Dimorphopteryx sp.	— of Douglas-fir	<b>'68-</b> 123 <b>'69-</b>	
— of larch — of maple — '65-107 — of maple — '67-73 '68-91, 93 '70-28 '71-69 — of oak — '70-63 '71-69 — of pine — '67-70, 119 '68-91, 70-63 '71-69 — of pine — '67-70, 119 '68-74, 123 — '70-63, 64 '71-70 — of poplar — '69-31 — of Russian-olive — of spruce — '68-91, 108 — of spruce — '66-121 '69-81 '70-64, 84 '71-69 — of western hemlock '68-120, 123 '69-109 — of willow — '65-75 '68-92 '70-46, 85 Dieback and canker diseases of Douglas-fir '67-118 Dimeriella balsamicola '67-48 Dimerosporium abietis '67-104 Dimorphopetryx sp.   — of larch — '67-73 '68-92 '71-69 — '71-26, 44 '72-21 Dioryctria zimmermani '65-57 '66-64 '67-61 '68-6 Diplodia sp. '66-43, 112 Diplodia fraxini '67-84 Diplodia melaena '66-87 Diplodia tumefaciens '69-50 Diplodia tumefaciens '65-78 '67-83 '68-87, 107 '68 '72-81 Diplodia salicicola '70-46 Diprion frutetorum '66-40 '67-41, 63 '68-42, 61 45, 63 '71-62 '72-58 Diprion hercyniae '65-12, 23, 36, 52 '66-11, 23, 38 '67-12, 22, 40, 57 '68-13, 23, 40 '69-15, 25, 43, 63, 77 '70-14, 23 '57, 70 '71-13, 23, 42 '72-13, 43 Diprion similis '65-53 '66-64 '67-63 '68-61 Diprion similis '65-53 '66-64 '67-63	·		
- of maple			Dioryctria reniculella
91, 93 '70-28 '71-69 '71-69 '68-91 '71-70 '69-31 '66-42 '70-64 '71-69 '68-120, 123 '69-109 '68-120, 123 '69-109 '65-75 '66-42 Dieback and canker diseases of Douglas-fir '67-118 Dimerosporium abietis '67-104 Dimorphopteryx sp.  91, 93 '70-28 '71-69 '71-60 '71-69 '71-60 '71-60 '71-70 '70-63 '71-69 '72-81 '70-63 '71-69 '70-46, 84 '71-69 '70-46, 85 Dimerosporium abietis '67-104 Dimorphopteryx sp.  91, 93 '70-28 '71-69 '71-60 '71-60 '71-60 '71-60 '71-60 '71-60 '70-66 '70-60 '66-64 '67-61 '68-6 '70-66-64 '67-61 '68-6 '70-66-64 '67-61 '68-6 '70-60 '70-46 '			<b>'65-</b> 73 <b>'66-</b> 81 <b>'67-</b> 61, 81, 101 <b>'68-</b>
- of mountain-ash of oak	•	91, 93 ' <b>70-</b> 28	65, 84, 102 <b>'69-</b> 27, 45, 77 <b>'70-</b> 24 <b>'71-</b> 26, 44 <b>'72-</b> 21
of oak '70-63 '71-69 '72-50			
- of pine  '67-70, 119 '68-74,123 '70-63, 64 '71-70  - of poplar - of Russian-olive - of spruce  '68-91, 108 - of spruce  '66-121 '69- 81 '70-46, 84 '71-69 - of western hemlock '68-120, 123 '69-109 - of willow  '65-75 '68-92 '70-46, 85  Dieback and canker diseases '65-105 '66-42  Dieback and canker diseases '65-105 '66-42  Dieback and canker diseases '67-118  Dimeriella balsamicola '67-48  Dimerosporium abietis '67-104  Dimorphopteryx sp.  '66-43, 112  Diplodia fraxini '67-84  Diplodia melaena '66-87  Diplodia pinea '69-50  Diplodia tumefaciens '65-78 '67-83 '68-87, 107 '68 '72-81  Diplodia salicicola '69-50  Diplodia fraxini '66-87  Diplodia pinea '69-50  '70-46  Diplodia pinea '69-50  Diplodia pinea '69-50 '70-46  Diplodia pi	— of oak	<b>'70-</b> 63 <b>'71-</b> 69	
'68-74,123 '70-63, 64 '71-70  — of poplar — of Russian-olive — of spruce  '68-91, 108 — of tamarack — of tamarack — of western hemlock '68-120, 123 — of willow  '69-109 — of willow  '65-75 '68-92  '70-46, 85  Dieback and canker diseases '65-105 '66-42  Dieback and canker diseases '67-118  Dimeriella balsamicola '67-48  Dimerosporium abietis '67-104  Dimorphopteryx sp.  Diplodia melaena '66-87  Diplodia pinea '69-50  Diplodia tumefaciens '65-78 '67-83 '68-87, 107 '68 '72-81  Diplodia salicicola '65-78 '67-83 '68-87, 107 '68 '72-81  Diplodia salicicola '65-78 '67-83 '68-87, 107 '68 '72-81  Diplodia fraxini '66-87  Diplodia melaena '69-50  Diplodia salicicola '65-78 '67-83 '68-87, 107 '68 '72-81  Diplodia pinea '69-50  Diplodia fraxini '66-87  Diplodia melaena '69-50  Diplodia tumefaciens '65-78 '67-83 '68-87, 107 '68  '72-81  Diplodia melaena '69-50  Diplodia tumefaciens '65-78 '68-87, 107 '68  '72-81  Diplodia tumefaciens '65-78 '68-87, 107 '68  '72-81  Diplodia pinea '69-50  Diplodia tumefaciens '66-87  '72-81  Diplodia melaena '69-50  Diplodia tumefaciens '66-40 '67-83 '68-87, 107 '68  '72-81  Diplodia pinea '69-50  '70-46  Diplodia tumefaciens '66-40 '67-83 '68-87, 107 '68  '71-48  Diplodia tumefaciens '66-40 '67-83 '68-87, 107 '68  '70-46  Diplodia tumefaciens '66-40 '67-41, 63 '68-42, 61  45, 63 '71-62 '72-58  Diplodia tumefaciens '66-40 '67-41, 63 '68-42, 61  45, 63 '71-62 '72-58  Diplodia tumefaciens '66-40 '67-41, 63 '68-42, 61  45, 63 '71-62 '72-58  Diplodia tumef			
771-70 — of poplar — of Russian-olive — of spruce  768-91, 108 — of spruce  771-69  — of tamarack — of western hemlock '68-120, 123 — of willow  765-75 '68-92 — of willow  770-46, 85  Dieback and canker diseases  765-105 '66-42  Dieback and canker diseases  767-118  Dimeriella balsamicola  767-48  Dimerosporium abietis  771-70  768-91, 108 — of poplar — (66-87  Diplodia pinea  765-78 '67-83 '68-87, 107 '68  772-81  Diplodia salicicola  770-46  Diplodia salicicola  70-46  Diplodia salicicola  70-46  Diprion frutetorum  766-40 '67-41, 63 '68-42, 61  45, 63 '71-62 '72-58  Diprion hercyniae  767-12, 22, 40, 57 '68-13, 23, 40  767-13, 23, 36, 52 '66-11, 23, 38  767-104  Dimorphopteryx sp.	-	<b>68-</b> 74,123	
— of poplar — of Russian-olive — of spruce — (68-91, 108 — of spruce — (66-121 '69-81 '70-46, 84 '71-69 — of tamarack — of western hemlock '68-120, 123 — of willow — (69-109 — of willow — (65-75 '68-92 '70-46, 85 )  Dieback and canker diseases — (65-105 '66-42 )  Dieback and canker diseases of Douglas-fir (67-118 )  Dimeriella balsamicola (67-48 )  Dimerosporium abietis (67-104 )  Dimorphopteryx sp. (68-91) (68-87) Diplodia pinea (69-50 )  Diplodia tumefaciens (65-78 '68-87, 107 '68 (70-46 )  Diplodia salicicola (70-46 )  Diplodia salicicola (70-46 )  Diprion frutetorum (66-40 '67-41, 63 '68-42, 61 45, 63 '71-62 '72-58 )  Diprion hercyniae (65-12, 23, 36, 52 '66-11, 23, 38 (67-12, 22, 40, 57 '68-13, 23, 40 (69-15, 25, 43, 63, 77 '70-14, 23 (67-104 )  Dimorphopteryx sp. (66-64 '67-63 '68-61 )  Diprion similis (66-67 '67-63 '68-61 )			
— of Russian-olive			
- of spruce    **10-46, 84	A &		
— of tamarack '70-64 — of western hemlock '68-120, 123	— of spruce	<b>'66-</b> 121 <b>'69-</b>	<b>'69-</b> 50
— of western hemlock '68-120, 123 '69-109	·	<b>71-</b> 69	
## Of western helinock   66-126,   125     69-109			
- of willow '65-75 '68-92 '70-46, 85 '70-46, 85 '70-46, 85 '70-46, 85 '70-46, 85 '70-46, 85 '65-105 '66-42 '66-42 '67-41, 63 '68-42, 61 45, 63 '71-62 '72-58 '66-42 '71-62 '72-58 '71-62 '71-62 '72-58 '71-62 '71-62 '72-62			
Dieback and canker diseases  '65-105 '66-42  Dieback and canker diseases of  Douglas-fir  '67-118  Dimeriella balsamicola  '67-48  Dimerosporium abietis  '67-104  Dimorphopteryx sp.  '66-40 '67-41, 63 '68-42, 61  45, 63 '71-62 '72-58  Diprion hercyniae  '65-12, 23, 36, 52 '66-11, 23, 38  '67-12, 22, 40, 57 '68-13, 23, 40  '69-15, 25, 43, 63, 77 '70-14, 23  57, 70 '71-13, 23, 42 '72-13,  Diprion similis  '66-64 '67-63 '68-61  Diprion similis  '65-53 '66-64 '67-63 '68-61			
Dieback and canker diseases  '65-105 '66-42  Dieback and canker diseases of  Douglas-fir '67-118  Dimeriella balsamicola '67-48  Dimerosporium abietis '67-104  Dimorphopteryx sp.  '66-40 '67-41, 63 '68-42, 61  45, 63 '71-62 '72-58  Diprion hercyniae '65-12, 23, 36, 52 '66-11, 23, 38 '67-12, 22, 40, 57 '68-13, 23, 40 '69-15, 25, 43, 63, 77 '70-14, 23  57, 70 '71-13, 23, 42 '72-13,  Diprion similis  Diprion similis '66-64 '67-63 '68-61  Diprion similis '66-53 '66-64 '67-63 '68-61		<b>′70-</b> 46, 85	Diprion frutetorum
Douglas-fir '67-118 '67-12, 23, 36, 52 '66-11, 23, 38 '67-12, 22, 40, 57 '68-13, 23, 40 '67-48 '67-48 Dimerosporium abietis '67-104 Dimorphopteryx sp.  Diprion similis Diprion similis '66-64 '67-63 '68-61 Diprion similis '65-53 '66-64 '67-63 '68-61		ases	<b>'66-</b> 40 <b>'67-</b> 41, 63 <b>'68-</b> 42, 61 <b>'69-</b>
Dimeriella balsamicola  '69-15, 25, 43, 63, 77 '70-14, 23  '67-48  Dimerosporium abietis  '67-104  Dimorphopteryx sp.  '69-15, 25, 43, 63, 77 '70-14, 23  57, 70 '71-13, 23, 42 '72-13,  43  Diprion similis  '65-53 '66-64 '67-63 '68-61  '68-61	Douglas-fir	diseases of	<b>'65-</b> 12, 23, 36, 52 <b>'66-</b> 11, 23, 38, 60
Dimerosporium abietis 43 '67-104 Diprion similis Dimorphopteryx sp. '65-53 '66-64 '67-63 '68-61'	imeriella balsamicola		<b>'69-</b> 15, 25, 43, 63, 77 <b>'70-</b> 14, 23, 41
'67-104       Diprion similis         Dimorphopteryx sp.       '65-53 '66-64 '67-63 '68-61	· · ·		
Dimorphopteryx sp. <b>65-</b> 53 <b>66-</b> 64 <b>67-</b> 63 <b>68-</b> 61			Diprion similis
			<b>'65-</b> 53 <b>'66-</b> 64 <b>'67-</b> 63 <b>'68-</b> 61 <b>'69-</b> 45 <b>'70-</b> 53 <b>'71-</b> 59 <b>'72-</b> 43, 58
Dimorphopteryx melanognathus '68-65 '69-61 Discella carbonacea '66-43 '67-86		gnathus	

Douglas-fir cone moth Discella strobilina **'66-**116 '**67-**71 Douglas-fir engraver Discina ancilis '**65-**103 68-123 Douglas-fir mistletoe Discocainia treleasei 66-119 66-121 Douglas-fir needle cast Discula quercina '65-104 '66-119 **'70-**28 **'72-**29 Douglas-fir needle midge Diseases of non-indigenous trees **'65-**88, 105 **'66-**103 **'67-**119 '65-100 '66-114 '67-116 '68-118 '68-**'69-**105 **'70-**81 **'71-**85 **'72-**87 122 '69-107 '70-84 Diseases of thinned pine stands Douglas-fir needle rust **'66-**119 '**69-**93 Douglas-fir tussock moth Dogs '65-103 '66-116 '67-116 '68-118 '**70-**75 '69-105 '71-84 '72-83 Dothichiza canker **'66-**43, 71 **'69-**68 **'70-**27 Drepanopeziza populorum '65-76 '66-84 '67-87 '68-88 '69-80 '70-75 '71-79 '72-80 Dothichiza populea **'66-**43, 71 **'68-**76 Drepanopeziza salicis Dothidea sambuci **'65-**76 '**66-**72 '**68-**91 Drepanopeziza sphaeroides Dothiorella advena **'67-**71 **'68-**76 **'72-**50 Drepanopeziza tremulae Dothiorella populnea '69-32 **'67-**71 Drino bohemica Dothiorella pyrenophora var. salicis '66-11 **'65-**75 **'67-**86 Drought Dothiorella quercina '68-28, 121 '69-109 '71-88 '72-68 **'68-**76 **'70-**63 71-69 Dryocoetes-Ceratocystis complex Dothiorella ulmi '65-104 '66-119 '67-117 '68-116 **'65-42 '66-46** '69-102, 104 '70-79 '71-84 '72-85 Dothistroma sp. Dryocoetes confusus '**69-**50 **'65-**98 **'66-**114 **'67-**116 '68-116 Dothistroma needle blight **'69-**102 **'70-**79 **'71-**84 72-85 '**68-**121 Durandiella lenticellicola Dothistroma pini **'65-**30 **'65-**14, 105 **'66-**118, 121 **'67-**105 Durandiella fraxini Dothistroma pini var. lineare 70-46 **'66-**88 Dusky birch sawfly Dotted-line looper 67-12 **'65-**74 **'66-**83 **'67-**82 Douglas-fir beetle Dutch elm disease '**65-**96 '**66-**111 **'67-**111 **'68-**113 '**65-**26, 54, 59, 72 '**66-**18, 26, 33, 51, **'69-**98 **'70-**78 **'71-**83 **'72-**85 65 '67-25, 66 '68-26, 44, 62, 73,

87 '69-30, 41, 63, 67 '70-26 62 '71-28, 48, 65 '72-27, 62, 81  Dwarf mistletoe '65-86 '69-67, 105 '70-61, 86 '72-68, 88, 89  — of Douglas-fir '69-105 — of fir '69-108 — of hemlock '68-119 '70-82, 86 — of larch '69-105  '71-89 — of pine '65-85 '66	28, 48,
'67-65, 10 '68-90, 106, '69-92, 105 '71-69, 78 '65-62 '66- 14, 27, 44, 69, 90 '69- 62, 72, 83 '72-79	770-72
Earomyia abietum ' <b>71-</b> 86	<b>′66-</b> 89
Early brown looper '67-41	Elm lace bug ' <b>72-</b> 61
Eastern dwarf mistletoe  '65-13, 28 '66-13, 18, 29, 8  14, 27, 44, 65 '68-69 '69  '72-29	Elm leaf beetle  '71-27  Elm leaf miner  '65-24, 57 '66-62 '67-24 '68-25 '69-27 '70-24 '71-26
Eastern gall rust '65-30 '69-66	Elm sawfly ' <b>65-</b> 57 ' <b>66-</b> 81 ' <b>69-</b> 77
Eastern hemlock looper '66-10, 15 '67-10, 24, 42 25, 42 '69-11, 13, 16, 27, 45 12, 15, 21, 37 '71-11, 13, 15 37, 52 '72-12, 15, 26, 36	' <b>70-</b> 11, 118 ' <b>67-</b> 89, 102, 118 ' <b>68-</b> 74, 105,
Eastern larch beetle '65-85 '67-101 '68-104	Elytroderma disease of pine '70-83 '71-87 '72-79
Eastern pineshoot borer '68-63 '69-63	Elytroderma needle blight '67-118 '68-120 '69-106
Eastern subterranean termite '66-64	Enargia decolor '69-62 '70-40, 52, 53 '71-40, 57 '72-37, 57
Eastern spruce bark beetle '67-36	Encoelia furfuracea ' <b>67-</b> 84

'65-38, 56, 84 '66-38, 65, 81 '67-39 **'71-**89 **'68-**39, 59 **'69-**43 **'70-**38 **'71-**38 Encoeliopsis laricina **72-**38 '69-108 Erannis vancouverensis Endocronartium harknessii '**65-**102 '**69-**29, 66, 81, 90, 93, 106, 108 '**70-**28, 44, 60, 71 '71-29, 45, 46, 64, 76 Eriocampa ovata **'70-**57 '**72-**29, 48, 65, 66, 77, 90 Eriophyes sp. Endothia parasitica 66-41 '**65-**63 Eriophyes fraxiniflorae Englemann spruce weevil **'66-41** '**65-**85 '**66-**99, 116 '**69-**102 Eriophyid mite, A Engraver beetles **'66-41 '71-**50 **'65-**57, 85 **'66-**116 **'68-**117 Eriophyid on spruce Entomogenous fungus '**72-**62. '**70-**12, 85, 86 **'71-**11 Eriosoma americanum Entomophthora sp. **'66-**81 '**67-**81, 100 '**68-**85, 104 '**70-**38, 55, 56 '**71-**37 **'72-**84 '**69-**75, 89 Entomopox virus Eriosphaeria vermicularia '72-57 **'65-**30 **'66-**30 Entomosporium maculatum '**68-**74, 107 Erwinia amylovora '**65-**42 '**66-**46 '**67-**71 '**70-**45, 76 Epilampsis laricinellae '**71-**49, 80 '**72-**80 **'65-**51 **'66-**62 **'70-**14 Erysiphe aggregata Epinotia sp. **'65-**30 **'66-**72 **'65-**98 '**66-**108, 112 Eucosma gloriola Epinotia aceriella '65-50, 73 '66-59 '67-41, 64 '68-**'67-**64 **'68-**65 **'69-**63 **'70-**41, 57 63 '69-63 **'71-**62 **'72-**61 Eudarluca australis Epinotia nisella criddleana **'66-**89 '65-55 Eupithecia spp. Epinotia solandriana **'65-**73 '65-38, 73 '67-100 '68-84 '69-45 **'70-**41 **'71-**40 **'72-**37 Eupithecia filmata **'65-**73 **'67-**41 Epinotia tsugana **'67-**114 **'68-**117 Eupithecia luteata **65-**73 **'66-**81 Epiphyte **'71-**90 European alder leaf miner Epipolaeum abietis '**66-**12, 25, 41, 82 '**67-**12, 41, 81 **'67-**104 '68-85 '69-15, 77 '70-14, 70 '71-14 '72-14 Epirrita autumnata **'68-**118 European pine sawfly Epirrita pulchraria '65-52, 65 '66-51, 56 '67-56 '68-'**66-**115 '**67-**116 57 '**69-**59 '**70-**53 '**71-**58 '**72-**68

Erannis tiliaria

Encoeliopsis sp.

European pine shoot moth Fall cankerworm **'65-**12, 22, 38, 50, 98 **'66-**22, 41, 51, **'65-**20, 21, 22, 56, 71 **'66-**18, 21, 23, 59, 113 '67-21, 56, 114 '68-14, 22, 39, 51, 64, 78, 82, 100 '**67-**20, 21, 66, 116 '**69-**28, 64, 104 '**70-**25, 58, 40, 62, 78, 101 '68-21, 22, 39, 59, 82 '**71-**27, 63, 85 '**72-**26, 44, 59, 86 81, 103 '**69-**23, 42, 63, 76, 88 '**70-**22, 40, 70 '**71-**26, 38, 75 '**72-**25, European snout weevil 38, 60, 75 **'71-**63 **'72-**62 Fall webworm European spruce sawfly **'65-**12, 23, 36, 48 **'66-**9, 11, 23, 38, '**65-**24, 37, 57, 73, 101 '**66-**24, 38, 65, 115 '**67-**23, 40, 81, 115 '**68-**60 '**67-**12, 22, 40, 57 '**68-**13, 23, 40, 24, 41, 85, 118 '**69-**26, 44, 77, 103 61 '**69-**15, 25, 43, 63, 77 '**70-**14, 23, 41, 53, 57, 70 '**71-**13, 23, 42 '**72-**13, '**70-**40, 57 '**71-**25, 43, 62, 86 '**72-**24, 42, 60, 88 25, 43 False hemlock looper Euryachora betulina **'66-**90 **'67-**88 **'68-**89 **'65-**73 **'71-**44 '**72-**44 '**69-**79 False looper, A Eutryblidiella sabina '**68-**66 '**66-**46, 72 Favolus alveolaris Eutypa acharii '**65-**89 **'67-**86 Fenusa dohrnii Eutypella cankers **'67-**12, 41, 81 **'66-**12, 25, 41, 82 **'71-**48, 49 **'68-**85 **'69-**15, 77 **'70-**14, 70 **'71-**— of maple '**72-**48 14 '72-14 Eutypella parasitica Fenusa pusilla **'66-72 '67-48 '68-48 '69-66 '71-**'**65-**11, 21, 37, 53 '**66-**21, 60, 98 48, 49 '**72-**48 **'67-**20, 38, 57 **'68-**21, 38, 39, 64 **'69-**15, 23, 42, 61 **'70-**14, 22, 37, 50 Euxoa messoria **'71-**14, 23, 42, 60 **'72-**14, 22, 41, 58, **'68-**65 59 Evagora biops Fenusa ulmi **'65-**85 **'65-**24, 57 **'66-**62 **'67-**24 **'68-**25 Exobasidium bortii **'69-**27 **'70-**24 **'71-**26 **'72-**25 **'66-104** Fenusini sp. Exobasidium vaccinii **'67-**64 '**69-**108 Feralia jocosa **'66-**12 **'67-**12, 81 **'68-**85 Exosporium tiliae '67-71 Filament bearer **'71-**85 **'72-**85 Exoteleia dodecella '**67-**64 '**68-**63 Filatima betulae **'65-**57 Exoteleia pinifoliella Fir engraver '**65-**57 '**66-**65 '**67-**61 '**68-**41, 65 **'68-**118 External defects Fir-fireweed rust **'71-**48 **'72-**89 Fabraea maculata Fir harlequin '67-87 '68-91, 107 '66-41

Fomes pinicola Fire blight **'72-**50 **'65-**42 **'66-**46 **'67-**71 '**70-**45, 76 **'71-**49, 80 **'72-**80, 81 Fomes repandus **'67-**121 Flammula alnicola 66-121 Fomes subroseus **'67-**121 Flea beetles **'65-**102 **'66-**80, 116 **'67-**81 **'68-**65 Fomes root rot '**69-**63, 76, 105 '**70-**82 '**71-**86 '**72-**'65-61 '66-67 '67-69 '68-72, 119 88 Forest tent caterpillar Flood damage '**65-**22, 23, 45, 47, 55, 64, 69, 80, 83, '**70-**26, 75, 84 91, 101 '66-18, 23, 34, 37, 49, 51-54, Fly speck fungus 72, 79, 95, 97, 107, 116 **'67-**22, 37, 40, 46, 55, 99, 115 **'68-**23, 38, 58, 85, **'69-**108 100, 118 '69-24, 42, 58, 78, 87, 103 Foliar diseases '**70-**23, 39, 51, 52, 62, 68, 69, 81 '**71-'67-**118 **'69-**58, 83 — of conifers '71-65 '72-66 24, 43, 57, 74, 85 '**72-**23, 42, 56, 75, — of hardwood '71-48 '72-47, 67, 80 **'72-**69 — of poplar Fracchiaea callista Foliar rusts **'69-**50 '71-76, 87 '72-89 Fringed looper Fomes sp. '66-12, 81 '67-12 '68-84 **'66-**89 Frost injury (damage) Fomes annosus **'65-**25, 38, 58, 74, 103, 105 **'66-**18, '**65**-61 '**66**-67 '**67**-28, 60, 69, 117 26, 34, 41, 42, 51, 68, 75, 108, 117, **'68-71, 119 '69-70 '70-44 '71-**66 122 '67-25, 43, 65, 104, 119 '68-26, **'72-**16, 65 43, 73, 121 '69-32 '70-15, 25 '71-Fomes cajandari 16, 27, 49, 88 '72-16, 27, 49, 55, 67, '**66-**104 '**67-**104 Fomes connatus Fruit and twig rust **'67-**48 **'69-**68 '71-80 Fomes everhartii Fruit worm **'65-**63 **'66-**72 **'67-**71 **'66-**83 **'67-**42, 82 **'68-**43 **'69-**45 Fomes fraxinophilus 70-41 **'65-**89 Funiago sp. Fomes igniarius **68-**120 '65-88, 89 '66-89, 90 '68-15 '69-Fume damage 17 '**72-**50, 81 **'65-**74, 105 **'67-**28, 119 **'68-**29 '**69-**32 '**70-**28, 84 '**71-**27, 80 '**72-**Fomes igniarius var. populinus **'72-**50 27, 50, 91 Fomes nigrolimitatus Fusarium sp. **'67-**121 **'65-**41 **'66-**46, 89 **'68-**27 **'71-**68 '72-29, 81 Fomes pini **'66-**70, 72 **'67-**44, 104 **'71-**69 **'72-**Fusarium decemcellulare 16, 81 70-63

Fusarium larvarum Globose gall rust **'69-**22 '66-44 '67-27 '68-29, 87 '72-29, Fusarium lateritium var. mori 65, 77, 90 **'67-**71 **'69-**68 Gloeocoryneum cinereum **'65-**78 **'66-**101 Fusarium oxysporum **'68-**122 '**69-**107 Gloeosporidiella ribis **'66-**46 **'69-**50 Fusarium solani '69-107 Gloeosporium apocryptum '65-13, 26, 42 '66-13, 27 '67-14, 26 Fusicoccum abietinum '68-15, 29 '65-14, 29 '66-29 '67-14, 28 '68-15, 46 **'70-**28 **'71-**29 Gloeosporium aridum **'65-**26, 42 **'66-**27 **'67-**26 Fusicoccum bacillare **'66-**88 Gloeosporium fagicola **'65-**26 **'66-**27 **'67-**26 Galerucella carbo **'65-**102 **'67-**116 **'68-**118 Gloeosporium quercinum **'65-**26 **'66-**30 **'69-**68 Galerucella decora **'65-**70, 84 **'66-**79, 99 **'67-**79, 101 Glomerella cingulata '**68-**83 **'70-**85 **'71-**89 Galerucella punctipennis Glomerularia corni **'67-**101 **'67-**87 Galls Glycobius speciosus '**69-**50, 108 **'71-**44 Gall aphids Gnathotrichus sp. **'65-**72 **'68-**84, 103 **'69-**76 **'71-**84 Gall maker Gnathotrichus retusus **'65-**74 **'66-**83 '**68-**117 '**69-**104 '**70-**81 Galls of pine Gnathotrichus sulcatus **'67-**48 **'70-**85, 86 **'67-**83 — of poplar Gnomonia quercina - of maple '**66-**45, 72 **'65-**76 **'66-**85 — of snowberry '65-42 Gnomonia ulmea - of spruce **'65-4**1 **'66-**97 **'65-**30 **'66-**30, 85 **'67-**87 **'68-**91 - of willow **'65-41 '69-**80 '**70-**76 '**72-**50 Gall rust '**67-**119 '**69-**29, 66, 69, 81, 90, 106, Gnomoniella coryli **'65-**30 **'66-**30 **'68-**92 108 '70-28, 46, 60, 71 '71-29, 45, 53, 64 '72-48 Godronia sp. Ganoderma applanatum **'66-**119 '**67-**92 Godronia cassandrae f. betulicola Gelechiid. A **'68-49 '68-**65 Godronia confertus Geometrid, A **'66-**72 **'68-**49 70-41 Godronia fuckeliana Globose gall of poplar **'66-**72 '65-78 '72-81

Green spruce aphid Godronia fuliginosa 65-101 '**65-**106 '**68-**49 Greenstriped caterpillar Godronia multispora '66-12 '67-12, 81 '68-85 770-46 Greenstriped forest looper Godronia rhois '65-101 '66-108, 113 '67-113 '68-'68-49 115 '69-101 '70-39, 80 '71-85 Godronia seriata **'72-**88 65-75 Greenstriped mapleworm Gonioctena americana '65-57 '68-85 '69-44 '70-38, 55, '**65-**70, 85 '**66-**79, 99 '**67-**79, 101 56 '71-26, 43, 60 '72-25, 42, 59 '68-82, 102 '69-74, 88 '70-70 '71-Green stain of slash 76 '72-61, 76 **'65-**29 Gouty vein midge Green velvet looper 68-42 68-118 Gracillaria sp. Gremmeniella abietina '**66-**65, 80, 116 '**67-**64 '**72-**28, 45, 62, 63 Gracillaria invariabilis Griphosphaeria corticola '66-41 68-92 Gracillaria negundella Griselda radicana **'67-**81 **'68-**85 **'69-**77 '65-12 '66-12 '67-13 Gracillaria syringella '**65-**24 '**66-**25, 98 '**67-**24 Grosbeaks 69-67 Graphium sp. '**65-**40 '**68-**87 Grovesiella abieticola 72-91 Grasshoppers Grypocentrus albipes **'67-**101 72-14 Gray mold Guignardia aesculi '**67-**47, 120 '65-26 '66-27 '67-28 '68-29 '69-Gray mold blight 32 '70-28 '71-29 '72-29 '66-120 '70-27 '72-50 Gymnosporangium sp. Gray spruce looper 66-30 '66-40 '67-41 Gymnosporangium clavariiforme Gray spruce tussock moth 65-30 67-93 '65-74 '68-68 Gymnosporangium clavipes Gray willow leaf beetle '67-92 '68-74, 76, 107 '71-69 '**65-**70, 84 '**66-**79, 99 '**67-**79, 101 72-69 '68-83 '69-78 '70-70 '71-14 '72-Gymnosporangium connersii 15 Green balsam looper Gymnosporangium corniculans **'65-**12 **'66-**12 **'67-**13 67-92 Greenheaded spruce sawfly Gymnosporangium cornutum **'65-**12, 70 **'66-**12, 38, 76 **'67-**13. '65-14 '66-14, 104 '67-14, 71, 92 40, 82 '68-43 '69-15, 45 '70-14, '68-15, 74 '69-17 '70-16 '71-16, 42 '71-14, 44 '72-15, 44 69

Gymnosporangium gaeumannii Hemlock sawfly **68-**108 '**70-**76 '**71-**80 '**65-**102 Gymnosporangium globosum Hendersonia pinicola **'68-**74 '**71-**69 **'72-**69 '65-87 '66-72, 88 '67-89, 102 '68-108, 121 Gymnosporangium juniperi-virginianae 67-71 '68-74 Hendersonula toruloidea 72-91 Gymnosporangium nelsoni 66-104 Herbicide injury (damage) '65-39 '66-30, 42 '67-70 '69-32 Gymnosporangium tremelloides 66-104 Hercospora tiliae **'71-**50 Gypsonoma haimbachiana 68-65 Herpobasidium deformans '**65-**42, 89 Gypsy moth **'65-**37 **'66-**33, 37 **'67-**37 **'68-**39 Herpotrichia coulteri '**69-**42, 64 '**70-**40, 57 '**71-**25, 41, **'69-**108 62 '72-24, 41, 60 Herpotrichia nigra **'66-**104 Hail damage **'65-77 '68-44 '69-**68, 93 **'70-**43, Heterarthrus nemoratus 62 '**71-**68, 80 '**72-**49, 81 '65-11, 24 '66-25 '67-13 '68-38, 39 '**69-**42 Halisidota argentata **'65-**102 '**68-**118 **'72-**88 Heterocampa biundata Halisidota caryae **'68-**59 '69-62 Heterocampa guttivitta '68-58 '69-44, 58 '**70-**24, Halisidota maculata **'67-**61 **'71-**24, 44, 62 **'72-**23 '65-73 '66-82 '67-81 '68-85 '70-38, 55 14 Hickory tussock moth '**69-**62 Heart rot 66-72 ′**71-**51 '72-81 Horses **70-75** Heartwood stain 66-72 Hyalopycnis blepharistoma Helotium resinicolum 69-108 Hyalopsora aspidiotus Hemichroa crocea **'72-**47 '65-24 '67-13, 116 '68-13 '69-15, Hvdria prunivorata 77 '70-14 '72-25, 44, 61 '**70-**57 '**71-**62 **'72-**61 **'69-4**5 Hemimyriangium betulae Hydrogen fluoride '66-86 '67-71, 92 '68-76 '69-79 **'72-**50 Hemlock looper (see also eastern hem-Hylemya anthracina lock looper) '65-11, 24, 101 '66-9, 10, 25, 41 **'69-**104 **'70-**80 **'71-**86 Hylobius sp. Hemlock mortality '65-10, 84 '66-100 '68-25 '71-15 69-106 '**72-**26 Hemlock needle miner, A **'65-**98, 108 **'66-**108, 112 Hylobius congener **'67-**114 '**67-**42 '**71-**61 '68-117

Hylobius pales '65-55 '66-58 '67-60 '71-61	Hypodermella mirabilis '65-29, 30, 41 '66-30, 45, 88
Hylobius radicis '65-57 '66-65 '71-61	Hypodermella montana ' <b>65-</b> 87 ' <b>66-</b> 88, 101
Hylobius warreni '65-11 '66-116 '68-102 '71-61	Hypodermella montivaga ' <b>65-</b> 87
' <b>72-</b> 61 Hylurgopinus rufipes	Hypodermella nervata '65-29, 41, 87 '66-29, 45, 88
<b>'65-</b> 54, 72 <b>'66-</b> 63, 82 <b>'67-</b> 60, 66 <b>'68-</b> 62, 87 <b>'69-</b> 41, 77 <b>'70-</b> 55	Hypodermella punctata ' <b>65-</b> 41
Hypagyrtis piniata '65-73 '66-82	Hypoxylon canker of deciduous trees '67-83' '68-87
Hyperaspis sp. ' <b>68-</b> 64	— of poplar '65-26, 62 '66-27, 43, 71, 84 '67-26, 66 '68-
Hyperetis amicaria ' <b>68-</b> 59	27, 71, 72, 106 ' <b>69-</b> 79, 92 ' <b>70-</b> 73 ' <b>71-</b> 50, 78 ' <b>72-</b> 48, 79
Hyperparasites '71-89	Hypoxylon coccineum '65-75
— of black knot '67-48  — of black knot '67-28	Hypoxylon cohaerens
— of mistletoe '67-105 '68-107 '70-85, 86 '71-87	' <b>71-</b> 69 Hypoxylon deustum
— of <i>Polyporus</i> ' <b>68-</b> 92 — of <i>Poria</i> ' <b>68-</b> 91	65-38 Hypoxylon fuscum
— of rust (fungi) ' <b>65-</b> 107 ' <b>66-</b> 89, 104, 105, 121 ' <b>67-</b>	<b>'66-</b> 84 <b>'67-</b> 83
104 ' <b>68-</b> 107 ' <b>69-</b> 90, 94 ' <b>72-</b> 78, 89	Hypoxylon mammatum '66-27, 43, 71, 84 '67-26, 46, 66, 83 '68-27, 45, 71, 87, 106 '69-68, 79, 92
Hyphantria cunea  '65-24, 37, 57, 73, 101 '66-24, 38, 65, 82, 115 '67-23, 40, 81, 115 '68-	<b>'70-</b> 73 <b>'71-</b> 50, 69, 78 <b>'72-</b> 29, 48, 49, 79
24, 41, 85, 118 ' <b>69-</b> 26, 44, 77, 103 ' <b>70-</b> 40, 57, 82 ' <b>71-</b> 25, 43, 62, 86 ' <b>72-</b> 24, 42, 60, 88	Hypoxylon pruinatum '65-26, 62, 78, 88 '66-84 '67-83 '68-87
Hypocrea pulvinata ' <b>68-</b> 92	Hypoxylon rubiginosum. '67-83
<i>Hypodermella ampla</i> ' <b>65-</b> 29, 41, 61, 77 ' <b>66-</b> 30, 45, 70, 88	Hypoxylon vogesiacum ' <b>70-</b> 85
Hypodermella arcuata ' <b>72-</b> 79	Hysterium acuminatum ' <b>65-</b> 77
Hypodermella concolor ' <b>65-</b> 42, 87 ' <b>66-</b> 46, 101 ' <b>68-</b> 108	Hysterographium fraxini '65-63 '66-86
Hypodermella laricis '65-12, 104 '66-14, 88, 118 '67-14	Ice and snow damage '65-12 '72-49, 91
<b>'68-</b> 14, 92 <b>'69-</b> 17 <b>'70-</b> 16, 83 <b>'71-</b> 16, 87 <b>'72-</b> 17, 69, 91	Ice storm damage '67-43 '68-44, 73 '69-68

Imported willow leaf beetle '71-45	Itame pustularia ' <b>72-</b> 23, 24
Ink spot of aspen  '65-29, 87, 105 '72-29, 47  — of poplar '65-13, 27, 41, 59, 76  '66-9, 13, 28, 44, 51, 68,  89, 103 '67-14, 28, 46,  66, 86, 103 '68-15, 28,  48, 67, 88, 105 '69-31,  49, 65, 80, 92, 106 '70-  27, 45, 59, 73 '71-29,  48, 60, 78, 78, 770-16, 20,	Jack pine budworm  '65-50, 68, 80 '66-57, 58, 77, 92 '67-40, 53, 77 '68-40, 56, 60, 80 '69-40, 56, 57, 74 '70-35, 51, 69 '71-26, 41, 56, 75 '72-20, 37, 40, 56, 75  Jack pine midge '68-42  Jack pine mistletoe
48, 69, 78 ' <b>72-</b> 16, 29, 67, 80	' <b>66-</b> 87, 93
Introduced pine sawfly '65-53 '66-64 '67-63 '69-45 '70-	Jack pine mortality '68-74
53 ' <b>71-</b> 59 ' <b>72-</b> 43, 58 <i>Ips</i> sp.	Jack pine needle miner '65-57 '66-65 '67-61 '68-41, 65
' <b>65-</b> 102 ' <b>68-</b> 117 ' <b>69-</b> 75	Jack pine resin midge '65-57 '66-64 '67-63 '68-42 '72-
<i>Ips borealis</i> ' <b>65-</b> 57, 85 ' <b>68-</b> 104	61
Ips grandicollis '65-57	Jack pine sawflies '65-73 '66-33, 82 '68-37 '69-40 '70-36, 54 '71-41, 51, 58 '72-40, 58
Ips perturbatus '65-85, 102 '68-104, 117 '69-89	Juniper webworm  '65-102 '66-116 '67-116
<i>Ips pini</i> '65-102 '66-65, 116 '67-60 '71-89	Kabatia lonicerae ' <b>65-</b> 63
Ips plastographus ' <b>66-</b> 116	Kabatiella apocrypta '69-32, 50 '72-28, 47
Isaria farinosa ' <b>70-</b> 56	Kratochviliana laricinellae '69-61
Isotomurus palustris '71-86	Kirschsteiniella thujina ' <b>66-</b> 46
Isthmiella abietis '68-123	Kriegeria juniperina ' <b>67-</b> 104 ' <b>68-</b> 92
Isthmiella crepidiformis '67-48, 71, 89, 102 '69-17, 69 '70-	Kriegeria seaveri ' <b>65-</b> 106
16, 63 ' <b>72-</b> 69 Isthmiella faullii	Lace bug '65-57, 102 '66-24, 116 '70-57
'67-28, 72 '68-14, 48 '69-17, 32, 69 '71-16, 69 '72-69	Lachnella wilkommii ' <b>67-</b> 72
Isthmiella quadrispora ' <b>68-</b> 108, 123	Lachnellula flavovirens ' <b>68-</b> 123
Itame loricaria ' <b>65-</b> 73 ' <b>66-</b> 82	Lachnellula gallica ' <b>68-</b> 49

Larch woolly aphid Lachnellula occidentallis '65-102 '68-49 '70-46 Large aspen tortrix Lachnellula resinaria '66-79, 95, 97 '67-78, 99 '68-65, **'70-**46 , 81, 101 '**69-**42, 61, 62, 73, 87 '**70-**Lachnellula suecica 38, 40, 52, 53, 68, 81 '**71-**40, 56, 57, '65-63 '70-46 71, 74, 85 '**72-**23, 37, 57, 75, 87 Laeticorticium roseum Laricobius erichsonii **'66-72** '**66-**110 Lambdina fiscellaria fiscellaria Laspevresia sp. **'65-**11, 24 **'66-**10, 25, 41 **'67-**10. **'65-100** 24, 42 '68-11, 25, 42 '69-11, 27, 45 '**70-**11, 21, 37 '**71-**26, 37 '**72-**12, Laspevresia piperana '66-114 26, 36 Lambdina fiscellaria lugubrosa Laspeyresia youngana **'65-**99 **'66-**113 **'67-**114 **'68-**115 '66-114 '67-100 '68-102, 117 '69-**'69-**101 **'70-**79 **'71-**11, 84 **'72-**84 104 '**70-**80 '**71-**86 '**72-**87 Larch bud moth Leaf and gall rust '65-99, 108 '66-114 '67-115 '68-**'72-**69 Leaf and twig blight of largetooth 118 aspen Larch casebearer '**72-**30, 67 '**65-**12, 22, 51, 73, 102 '**66-**12, 22, '65-13, 27, 41, — of poplar 40, 62, 81, 108, 113, 122 '**67-**12, 21, 59, 74, 89, 107 39, 58, 113 '**68-**13, 22, 40, 61, 111, '66-9, 28, 47, 115 '**69-**24, 43, 60, 77, 102 '**70-**22, 84, 105 '67-14, 41, 57, 70, 81 '71-22, 43, 62, 84, 91 29, 49, 67, 83, '**72-**22, 43, 61, 87 103 '68-15, 29, Larch dwarf mistletoe 67, 87, 120 71-89 '69-33, 50, 65, Larch needle cast 79, 92, 106 **'66-**118 '70-15, 29, 59, 63, 74, 83 '71-Larch needle blight 15, 69, 78, 87 **'70-**83 '**71-**87 '**72-**15, 17, 80, Larch needle worm 90 **'70-**58 **'71-**14, 63 **'72-**15 — of trembling aspen '66-47' **72-**30, Larch sawfly 51, 67 **'65-**10, 20, 32, 36, 48, 67, 79, 83, 97, — of willow '72-70 — of vew 108 '**66-**9, 11, 16, 18, 20, 34, 37, 56. '67-105 76, 91, 98, 108, 112, 122 '**67-**10, 19, Leaf and twig gall rust 39, 56, 78, 100, 112 '**68-**12, 20, 40, 71-69 58, 81, 101, 115 **'69-**13, 22, 43, 60, Leaf beetle 74, 88, 102 '70-13, 21, 42, 54, 68, '**65-**73, 102 '**66-**99 '**67-**99 '**68-**102 69, 81 '**71-**12, 13, 22, 31, 45, 59, 74, Leaf beetles on poplar 85 '**72-**13, 21, 44, 59, 77 **'67-**101 **'68-**102 Larch twig beetle — on willow '67-101 '68-102 '69-**'65-**85 89 '70-70

Leaf blight '71-29	Leaf roller on alder '67-100
— of aspen '65-87 '66-103 — of balsam poplar '69-69 — of cedar '67-120 — of honeysuckle '65-42, 89	— on aspen  '66-26, 83 '67- 25, 82 '68-21 '69-64 '70- 41, 42 '72-77
— of maple — of poplar  '65-42 '65-63, 88, 89 '66-13, 103 '67- 48, 88, 103 '68-	— on basswood '69-63 — on birch '67-100 — on deciduous trees '68-84, 86 '69-70
74, 89, 105 Leaf blisters '65-14, 27, 30, 42, 43 '66-27, 30 '67-29, 49 '68-29, 124 '69-33, 51 '70-29 '71-51	— on hardwoods — on maple  '66-23 '67-23, 41, 81 '68-24, 83, 85 '69-26, 63 '70-23, 70
Leaf blotch miner '67-115 Leaf blotch of aspen	
'65-63 — of horse chestnut '65-26 '66-27 '67-28 '68-29 '69-32 '70-28 '71-29 '72-29 — of sugar maple '72-47	'68-43, 103 Leaf rust '68-10 — of apple '68-74 — of aspen '65-42 '66-44 '70-45 '71-78
Leaf diseases '66-84, 95 Leaf drop '72-57, 80	' <b>72-</b> 69 — of aster ' <b>68-</b> 91 — of bearberry
Leafhoppers '68-120	'67-104 '68-91 — of bilbery '65-89
Leaf miners  '65-57, 102 '70-14, 22, 24, 35, 37, 56, 57, 70, 82 '71-14, 23, 26, 42, 44, 60, 61, 63  — on alder — on aspen — on elm — on lodgepole pine '72-76 — on oak — on poplar — on willow  '66-115 '67-80, 102 '68-104	- of birch '67-92 '68-92 '69-48, 94 '70-45 '71-50 '72-17 - of buckthorn '68-29 - of cherry '65-63 '67-93 - of comandra '68-90 - of fern '68-29 - of fir
Leaf mining sawfly '67-82 '69-78  Leaf roller, A '65-25, 38, 73 '66-115 '68-42, 83, 84, 86 '69-44, 45, 76	'68-29, 89 — of fireweed '65-89 '68-91 — of goldenrod '67-47, 91

- of birch — of hawthorn '65-13, 76 '67-48, 72, 87 '68-15, '**69-**70 **'67-**92 **'68-**74 48, 49 '**69**-109 '**70**-29 '**71**-79 — of hemlock **'70-**63 - of caragana **'65-**76 **'66-**105 **'67-**87 **'68-**89 — of juniper **'68-**74 **'69-**80 **'70-**75 **'71-**79 — of Labrador-tea — of cherry **'68-**91 **'65-**88 **'67-**118 **'67-**87, 104 **'68-**88 — of mountain-ash — of currant '65-14 '66-14 '**67-**14, 71, 92 **'69-**50 '68-15, 74 '69-17 '70-16 '71-16 - of dogwood - of poplar **'65-**76 **'67-**87 '65-89, 105, 106 '67-47, 88 '68-— of elm 89 '69-32, 48, 69, 80 '70-15, 28, '**66-**30 '**67-**87 '**68-**91 **'65-**30 63 '**71-**78 **'69-**80 **'70-**76 - of Saskatoon (see also service-- of gooseberry berry) **'66-**46 **'67-**92 - of serviceberry (see also Saskatoon) - of hawthorn **'68-**74 '**68-**93 - of tamarack - of hazel '**67-**28 '**68-**29 '**69-**28, 74 **'65-**30 **'66-**30 - of viburnum — of honeysuckle **'67-**47 **'65-**63 — of white flowered wintergreen — of juniper **'66-**105 **'65-**76 - of willow — of maple **'65-**63 **'67-**28, 72, 105 **'68-**29, '**65-**14, 27, 76 '**66-**28 '**68-**15, 93 75, 89 '**69-**48, 80 '**70-**28, 74 - of mountain-ash '**71-**16, 78 '**72-**17, 69 **'67-**73 **'68-**74, 107 — of wintergreen - of oak **'67-**104 **'65-**76 **'67-**87 — of pin cherry Leaf scorch **'65-**58 **'66-**67 **'66-**104 — of poplar Leaf scorch of maple '**65-**76 '**66-**47, 104 '**67-**47, 48, **'69-47** 49, 73, 87, 103 '68-15, 74, 88, 105, Leaf spot 107 '69-32, 69, 80 '70-74 '71-'**68-**10 '**71-**79 '**72-**47, 50, 80, 91 79, 89 — of alder - of pine **'65-**76 **'66-**105 **'65-**76 - of arbutus - of Saskatoon '**69-**108 '**67-**87 '**68-**91 - of ash - of trembling aspen **'67-**87 **'68-**92 **'65-**76 — of aspen — of white flowered rhododendron **'69-**93 '66-104 - of basswood - of willow **'71-**29 '**65-**76 '**67-**87 '**68-**15, 92 '**69-**81

Lecanium (prob.) cerasifex Linospora tetraspora **'67-**42 '**65**-63, 76, 88 '**66**-84, 103 '**67**-48, Lecanium corvli 88, 103 '**68-**74, 85, 105 '**69-**69, **'66-**82 **'67-**81 **'68-**85 80 '70-74 '71-79 '72-69, 80 Lecanium scale Lirula brevispora **'66-**82 **'67-**42, 81 **'68-**85 **'68-**123 **'69-**108 Lenzites saepiaria Lirula macrospora **'66-**104 '**67-**103 '**68-**105, 108, 124 '**69-**17, 32 **'70-**16, 28 Lepidosaphes ulmi 69-105 Lirula mirabilis '**68-**29, 74, 75, 105 '**69-**32, 69 Leptomelanconium cinereum 72-91 Lirula nervata '**67-**28, 89 '**68-**29, 48, 90 '**69-**32, Leptosphaeria faullii 91 '70-28 '71-69 **'67-**48 **'68-**123 **'69-**69 Lirula punctata Leptothyrium medium '**68-**123 **65-**76 Lithocolletis spp. Lepyrus palustris **'67-**62, 64 **65-**73 **66-**82 Lithocolletis aceriella Lesser maple spanworm **'70-**57 **'71-**62. '**72-**23 Lithocolletis hamadryadella Leucopis (Neoleucopis) sp. nr. atratula **'68-**65 **'69-**63 **'70-**57 Lithocolletis kenora Leucopis (Neoleucopis) sp. nr. mela-**'71-**62. nopis Lithocolletis nipigon **'67-**19 '**71-**63 '**72-**60 Leucostoma sp. Lithocolletis ontario **'67-**48 '**71-**63 '**72-**60 Leucostoma kunzei '66-47 '70-63 '71-47, 69 '72-48, Lithocolletis salicifoliella **'65-**55, 70 **'66-**62, 80 **'67-**42, 62, 80 49, 69 '**68-**64, 83 '**69-**77 '**71-**62, 63 Leucostoma cankers on conifers **'72-**48 Lithocolletis tremuloidiella 72-77 Leucostoma massariana Lithophane amanda **'65-4**2 '**65-**73 Libertella sp. Little carpenterworm **'67-**44, 84 **'67-**64 Lihertella betulina Locust borer **'67-**84 '**69-**27 '**72-**26 Lilac leaf miner Lodgepole needle miner **'65-**24 **'66-**25, 98 '**67-**24 '66-99, 117 '67-101 '68-103 '69-Linden looper 89 '**70-**70 '**71-**75 '**65-**38, 56, 84 '**66-**39, 65, 81 '**67-**39, 40 '**68-**39, 59 **'69-43 '70-**38 Lodgepole pine beetle '**68-**103 '**69-**89 '71-38, 39 '72-38

Lodgepole terminal weevil '65-85 '66-99, 117 '68-117 '71-76	Lophodermium piceae '66-47, 88, 101, 104 '67-89 '69-80 '70-63
Loopers  '65-72, 73, 74  — on ash — on birch — on caragana — on cherry  '66-82  '66-82  '66-82  '66-82  '70-57  '71-62	Lophodermium pinastri '65-77, 87 '66-88, 101, 102 '67-48, 89, 104 '68-48, 90, 120, 121, 122 '69-17, 69, 80, 91 '70-63, 84 '71- 29 '72-66
' <b>72-</b> 61 — on conifers ' <b>69-</b> 46, 105	Lophodermium sphaeroides '66-85
— on Douglas-fir ' <b>66-</b> 116 ' <b>67-</b> 116 — on elm ' <b>66-</b> 82 — on fir ' <b>66-</b> 81, 82	Lophodermium tumidum '66-88
— on juniper ' <b>66-</b> 65 — on maple ' <b>66-</b> 38 ' <b>67-</b> 39	Lophomerum autumnale '69-91 '72-91
— on spruce '66-81, 82 '68-86 '66-81, 82 '68-86	Lophophacidium hyperboreum '67-48, 105 '69-49
Lophodermella arcuata '68-124 '72-79	Lopidea dakota '65-73 '66-82 '67-82 '68-85
Lophodermella concolor '67-102, 118 '68-105, 108, 121 '69-91, 93, 94, 106 '70-72 '71-77	Lycaenopsis cinerea ' <b>72-</b> 89
' <b>72-</b> 79  Lophodermella montivaga ' <b>68-</b> 105, 108 ' <b>69-</b> 91 ' <b>70-</b> 73	Lyonetia spp. '65-84, 102 '66-99 '67-80, 102, 115 '68-104, 117 '70-82
Lophium mytilinum ' <b>66-</b> 87	Macrodactylus subspinosus '72-61
Lophodermium sp. '65-12 '66-14 '68-14 '70-16	Macrophoma sapinea ' <b>66-</b> 72 ' <b>67-</b> 48 ' <b>70-</b> 46
Lophodermium darkeri '66-47 '68-108, 124	Macrophoma tumefaciens '65-89
Lophodermium filiforme '65-29, 78, 87 '68-14	Madremyia sandersii
Lophodermium juniperinum '65-42, 77, 89 '66-88 '67-89, 104 '68-93 '69-81	'69-12  Malacosoma americanum '65-24, 35, 51 '66-25, 37, 63 '67-
Lophodermium lacerum ' <b>69-</b> 91, 94	24, 37, 63 ' <b>68-</b> 25, 39, 65 ' <b>69-</b> 27, 42, 78 ' <b>70-</b> 24, 39 ' <b>71-</b> 26, 43 ' <b>72-</b> 26,
Lophodermium laricinum '66-88, 104 '68-108, 124	42, 61  Malacosoma californicum lutescens
Lophodermium macrosporum '65-30, 87 '66-101 '68-108	' <b>69-</b> 75, 89
Lophodermium nitens ' <b>67-</b> 104	Malacosoma californicum pluviale '69-42, 78, 103 '70-39, 81 '71-43, 85 '72-42, 88

Malacosoma disstria  '65-22, 35, 45, 46, 69, 83, 101 '66-23, 37, 52, 79, 97, 116 '67-22, 37, 55, 99, 115 '68-23, 38, 58, 85, 100, 118 '69-24, 42, 58, 78, 87, 103 '70-23, 39, 51, 68, 81 '71-24, 43, 57, 74, 85 '72-23, 42, 56, 75, 88  Malacosoma lutescens	Marssonina santonensis '67-87  Marssonina tremuloides '65-87 '66-103 '67-103 '68-105, 106 '69-93 '70-75  Massaria conspurcata '67-85, 86
<b>'65-71</b> , 85 <b>'66-</b> 82, 100 <b>'67-</b> 80 <b>'68-</b> 104 <b>'72-</b> 77	Massaria inquinans '71-69
Malacosoma pluviale '65-38, 52, 85, 102 '66-63, 100 '67- 64, 116 '68-42, 65, 116	<i>Matsucoccus</i> sp. ' <b>67-</b> 49
Mamiania caryli '68-74	Maurodothia farrae ' <b>70-</b> 85
Maple bark scale '66-64	Mayetiola carpophaga ' <b>72-</b> 87
Maple bladder gall mite	Mayetiola piceae ' <b>68-</b> 104 ' <b>69-</b> 89
Maple blotch miner '70-57 '71-62	Meadorus lateralis ' <b>71-</b> 63
Maple decline '71-49, 68	Mealy bug on conifers, A '65-102 '66-117 '67-117 '68-118
Maple leaf cutter '65-57 '70-57	Mechanical injury '67-85 '71-49
Maple loopers '71-38	Megacyllene robiniae ' <b>69-</b> 27 ' <b>72-</b> 26
Maple petiole borer '66-39	Megastigmus lasiocarpae ' <b>71-</b> 86
Maple trumpet skeletonizer '67-64 '68-65 '69-63 '70-41, 57	Megastigmus spermotrophus ' <b>65-</b> 100 ' <b>71-</b> 86 ' <b>72-</b> 87
'71-62 '72-61  Marlatt's larch sawfly '65-11 '66-12 '67-12 '68-13, 84 '69-14 '70-14 '71-14 '72-14	<i>Melampsora</i> spp.  '66-47, 89 '67-28 '68-29 '69-69 '70-15
Marssaria conspurcata '66-87	Melampsora abietis-canadensis '65-60 '66-70 '67-69, 88 '68-68 '69-32, 69 '70-63 '71-69 '72-67
Marssonina juglandis '72-48	Melampsora abieti-capraearum '65-78 '67-88 '68-89 '69-69, 80 '71-16
Marssonina martinii ' <b>65-</b> 76	Melampsora albertensis '65-105, 106
Marssonina populi '65-76 '66-85 '67-48 '69-69 '72- 47, 69	Melampsora bigelowii '66-86 '67-88 '68-89 '69-80

Melanolophia imitata Melampsora epitea '65-101 '66-108, 113 '67-113 '68-'65-63 '67-47, 72, 105 '68-75 '69-115 '**69**-101 '**70**-80 '**71**-85 '**72**-88 48 '70-28, 83 '71-48 '72-48, 69 Melanospora largenaria Melampsora medusae **'66-**89 **'65-**42, 86, 105, 106 **'66-**44, 69, 86, 103, 119 '67-47, 88, 118 Meloderma desmazieri 121, 122 '**69-**32, 48, 80, 108 '**70-**28, '**67-**49 '**68-**75 45, 63, 74, 83 '**71-**16, 48, 78 '**72-**48. Merismodes fasciculatus 69, 80, 89 **'66-**86 Melampsora occidentalis Merulius ambiguus **'65-**105, 106 **'66-**85, 119 **'67-**88 68-49 **'68-**89 **'70-**74, 83 Mesochorus dimidiatus Melampsora paradoxa '**70-**69 '**71-**22 '69-32, 91 '70-28, 74 '71-78 '72-Mesoleius tenthredinis 17, 80 **'65-**97 **'66-**112 **'67-**113 '72-22 Melampsorella caryophyllacearum Messa nana '**65-**14, 28, 57, 87, 89 '**66-**14, 30, 45, 69-64 **'70-**57 '**71-**63 **'68-**66 70 '67-14, 28, 48, 72, 91, 105, 118 '**72-**58, 59 **'68-**47, 69 **'69-**32, 70 **'70-**46, 76 '**71-**16, 29, 47, 69 '**72-**17, 50, 69, 78 Messa populifoliella **67-**82 **'69-**78 Melampsoridium betulinum Mice '**65-**63 '**67-**92 '**68-**92 '**69-**48, 94 '**70-**45 '**71-**27 '**72-**27, 50 **70-**45 **'71-**16, 50 **'72-**17 Microcrocallis sp. Melampyrum lineare 66-47 70-71 Micro-moth Melanconiella sp. '65-10, 12 '66-11, 12 '67-13 **'65-**75 Micropera sp. Melanconiella appendiculata '66-47 '67-49 **'67-**48 Microsphaera penicillata Melanconis alni **'65-**30 **'67-**88 **'65-**75 **'69-**79 Microsporidia Melanconis alni var. marginalis '**72-**57 **'66-**104 **'68-**76 Microthelia biformis Melanconis nigrospora 67-49 67-44 Microthyrium microscopicum Melanconis stilbostoma **69-**108 **'65-**75 **'71-**50 Micurapteryx sp. Melanconis thelebala 72-62 **'66-**86 Midges Melanconium bicolor **'67-**115 **'69-**63 **'70-**41, 57 **'71-**44 '**67-**72 Milesia sp. Melanolophia canadaria '65-13 '66-13 '67-14 '68-14 '69-69-64 17, 48 '**71-**29

Milesia fructuosa 15, 45, 60 **'70-**14, 42, 57 **'71-**14. '66-47 '72-47 27, 45, 63 **'72-**15, 44 Mindarus abietinus Mountain pine beetle '**65-**12, 25, 38 '**66-**25, 41 '**67-**24, 42 '65-96 '66-111 '67-110 '68-104, '68-25, 118 '69-27 '70-14, 24 '71-112, 113 **'69-**100 **'70-**78 **'71-**83 14, 26 '**72-**15, 26, 39 Mourningcloak butterfly Miner on aspen **'65-**38, 72 **'66-**12, 25 **'67-**13, 64 **'66-**39 '**68-**13, 25, 85, 104 '**69-**27, 78 Mineral deposits Mucor sp. '**65-**39 **'70-**62 Miridae Mycena corticola '**72-**26 66-47 Mites Mycosphaerella sp. '**71-**50 **'70-**45 **'68-15** Monilia brunnea Mycosphaerella pinicola '**65-**106 Monilia ferruginea Mycosphaerella populicola '**65-**106 **'66-**104 **'67-**103 **'71-**89 '**72-**80 Monochamus spp. Mycosphaerella populorum **'68-**102 **'70-**74 **'71-**79 **'72-**80 67-114 '**72-**26 Monochamus scutellatus Myrothecium inundatum **'67-**82 '**68-**92 Monoctenus spp. Mytilidion gemmigenum **'67-**59 **'66-**87 Mytilidion karstenii Monoctenus fulvus **'67-**59 **'66-**87 Myxocyclus cenangioides Monoctenus juniperinus **'67-**59 **70-**46 Monoctenus suffusus Myxofusicoccum alni **'67-**59 **'65-**75 Myxosporium sp. Moose 66-47 **'70-**75 Myxosporium roumegueri Mordwilkoja vagabunda '65-73 '66-82 '67-82 '68-85 '69-65-78 Naemacyclus niveus **'65-**87 **'66-**88 **'67-**45 **'68-**120, 121 Mortality of balsam fir **'71-**50 **'69-**50 **'71-68** Naematoloma capnoides Mortality of jack pine **'70-**86 '**67-**44 '**68-**74 Nalepella halourga Mortality of red oak '**72-**62 **71-67** Native elm bark beetle Mountain-ash sawfly '**65-**54, 72 '**66-**63, 82 '**67-**60, 66 '65-12, 25, 38, 53 '66-9, 25, 41, 61 **'68-**62 **'69-**41, 77 **'70-**55 **'67-**25, 42 **'68-**14, 25, 43, 66 **'69-**

<i>Nectria</i> sp. ' <b>65-</b> 105 ' <b>66-</b> 43	' <b>67-</b> 45 ' <b>69-</b> 68	— of juniper	'65-42, 77, 88, 89 '67-104 '68-92, 93 '69-81
Nectria canker on b '66-43 '67-45 '6 43 '71-47	oalsam fir <b>68-</b> 46 ' <b>69-</b> 47 ' <b>70-</b>	— of larch	<b>'65-</b> 104 <b>'66-</b> 104, 118 <b>'68-</b> 108, 124 <b>'72-</b> 69, 91
Nectria canker on b '65-39 '66-43	peech	— of pine	' <b>65-</b> 30, 42, 61, 78, 87, 104 ' <b>66-</b> 30, 45,
Nectria cinnabarina '65-14 '66-86, 8 86 '68-108 '6	7, 104 <b>'67-</b> 84, 85,		46, 70, 88, 95, 101, 118 ' <b>67-</b> 44, 48, 49, 71, 102, 104, 118,
	r. faginata 6 ' <b>67-</b> 26, 46 ' <b>68-</b> <b>71-</b> 48, 67 ' <b>72-</b> 30,		119 ' <b>68-</b> 48, 68, 74, 75, 90, 92, 105, 108, 120, 124 ' <b>69-</b> 17, 31, 50, 65, 69, 91, 94, 100 ' <b>770-</b> 28, 72, 73
Nectria coryli ' <b>67-</b> 49			106 ' <b>70-</b> 28, 72, 73 ' <b>71-</b> 29, 65, 77 ' <b>72-</b>
Nectria dittisma ' <b>69-</b> 68 Nectria episphaeria		— of spruce	66, 69, 78 '65-29, 30, 78, 87, 88 '66-47, 69, 71, 95,
' <b>65-</b> 38			101, 102, 104 <b>'67-</b> 48, 71 <b>'68-</b> 14, 92,
Nectria fuckeliana ' <b>65-</b> 42, 107 ' <b>66</b>			105, 108, 123, 124 ' <b>69-</b> 17, 32, 69, 108
Nectria fuckeliana v ' <b>71-</b> 90	var. macrospora		' <b>70-</b> 16, 28, 63 ' <b>72-</b>
Nectria galligena '65-39 '66-43, 4 '71-48	45 <b>'67-</b> 46 <b>'69-</b> 41	— of tamarack	'67-14 '68-14, 92 '69-17 '70-16 '71-16 '72-17
Needle blight ' <b>72-</b> 50, 91		Needle diseases ' <b>70-</b> 76	
— of fir '65-6 — of pine '65-1 '67-1		Needle droop of p ' <b>66-</b> 59 ' <b>67-</b> 70	ine (also red pine) '68-74
	122 <b>'69-</b> 50, 107	Needle eating wee '67-117	vil, A
Needle cast '67-28, 102 '69		Needle fungus of t	fir
— of balsam fir	<b>'66-</b> 14, 29, 30, 45 <b>'67-</b> 49, 72, 89 <b>'72-</b>	— of pine '67	
	69 ' <b>65-</b> 104 ' <b>66-</b> 119	Needle midges of '71-60' '72-61	
	<b>'67-</b> 118 <b>'68-</b> 105 <b>'69-</b> 94, 106	Needle miner on v	vhite pine
	<b>'65-</b> 12, 29, 30, 41, 62 <b>'68-</b> 14, 29, 48, 75,	Needle rust	45, 46, 48, 69, 100,
	90, 105, 123 <b>'69-</b> 17,	108 '67-14, 27,	45, 67, 90, 102 '68-
	32, 69, 91, 94 ' <b>70-</b> 28 ' <b>71-</b> 16, 69	28 <b>'69-</b> 30, 48, 28	80 ' <b>70-</b> 27, 44 ' <b>72-</b>

— of conifers ' <b>72-</b> 46, 78	Nematus ventralis
— of Douglas-fir '65-105, 106 '66-	· ' <b>69-</b> 78
— of fir 119 '67-118 '65-28, 78, 87 '66-	Neodiprion spp.
47, 69, 101, 105	03-73, 100, 102 00-100, 114 07-
<b>'67-</b> 90, 121 <b>'68-</b> 14,	
68, 74, 91 <b>'69-</b> 17,	Non-dimension 11 (**
69, 81, 106 ' <b>70-</b> 16,	
64, 72 ' <b>71-</b> 50, 70, 77, 87 ' <b>72-</b> 15, 70,	
77, 87 <b>72-</b> 13, 70,	<b>'65-</b> 10, 23, 53, 71 <b>'66-</b> 41, 77 <b>'67-</b>
— of hemlock ' <b>68-</b> 29, 75 ' <b>69-</b> 33	11, 22, 39, 59, 80 ' <b>68-</b> 13, 23, 37, 61,
<b>'70-</b> 28	85, 102 ' <b>69-</b> 15, 25, 39, 60, 78 ' <b>70-</b>
— of juniper '66-104 '68-76,108 '70-76 '71-80	13, 23, 41, 54 ' <b>71-</b> 13, 26, 37, 59 ' <b>72-</b> 13, 26, 40, 62
— of larch ' <b>69-</b> 69	Neodiprion compar
— of pine '65-28, 63, 87, 88	' <b>68-</b> 38 ' <b>69-</b> 40 ' <b>71-</b> 58
<b>'66-</b> 46, 69, 70, 95,	TVEOGIDITION GUINDNUN
101 ' <b>67-</b> 91 ' <b>68-</b> 47, 68 ' <b>69-</b> 65 ' <b>70-</b>	'68-37 38 '69-40
59, 72 ' <b>71-</b> 28, 29	Neodiprion lecontei
' <b>72-</b> 16, 66, 79, 91	<b>65-</b> 38, 52 <b>66-</b> 39, 60 <b>67-</b> 42, 58
— of spruce ' <b>65-</b> 13, 28, 41, 63,	
76, 78, 86, 92, 104	
<b>'66-</b> 9, 13, 46, 69, 75, 88, 95, 100, 103,	
104 ' <b>67-</b> 68, 71, 90,	,
118 <b>'68-</b> 14, 47, 68,	Neoaiprion nanuius nanuius ' '65_52 '66_61 82 '67_58 '68_37
90, 105 ' <b>69-</b> 17, 64,	20 60 05 160 40 64 70 170 26 54
90, 93 ' <b>70-</b> 16, 71 ' <b>71-</b> 16, 47, 65, 76,	171 50 179-50
71-10, 47, 03, 70, 77, 89 ' <b>72-</b> 17, 66,	
92	<b>'68-</b> 37 <b>'71-</b> 58
— of tamarack '68-29 '69-32	Neodiprion pinetum
′ <b>70-</b> 16	' <b>66-</b> 25 <b>'67-</b> 24 <b>'71-</b> 63 <b>'72-</b> 62
Needle rust fungus	Neodiprion pratti banksianae
<b>′66-</b> 30	<b>'65-</b> 38, 53 <b>'66-</b> 41, 65, 82 <b>'67-</b> 42, 58
Needle spot	<b>'68-</b> 37, 60 <b>'69-</b> 40, 60 <b>'70-</b> 54 <b>'71-</b>
<b>′69-</b> 50	58 ' <b>72-</b> 40, 58
Nematocampa filamentaria	Neodiprion pratti paradoxicus '65-53 '66-61 '67-58 '68-37, 38,
' <b>71-</b> 85 ' <b>72-</b> 85	59 <b>'69-</b> 60 <b>'70-</b> 54 <b>'71-</b> 58 <b>'72-</b> 62
Nematodes '68-122 '69-107 '70-84 '71-87	
	' <b>68-</b> 37 ' <b>69-</b> 40
Nematus limbatus ' <b>65-</b> 54, 73 ' <b>66-</b> 82 ' <b>68-</b> 85 ' <b>69-</b> 78	Neodiprion sertifer
Nematus populi	<b>'65-</b> 48 <b>'66-</b> 56 <b>'67-</b> 56 <b>'68-</b> 57
' <b>66-</b> 82	<b>'69-</b> 59 <b>'70-</b> 53 <b>'71-</b> 58 <b>'72-</b> 57

Nursery pine sawfly Neodiprion swainei '66-40 '67-41, 63 '68-42, 61 '69-'65-35, 42 '66-36, 61 '67-36, 64 45, 63 **'71-**62 '68-38, 66 '69-40 '70-36, 54 '71-41, 58 '72-40, 58 Nursery problems **'69-**107 **'70-**84 ′**71-**87 **'72-**68 Neodiprion virginianus complex '65-24, 52 '66-24, 41, 61, 92 '67-Nvcteola spp. 23, 42, 58, 82 '68-25, 60 '69-64 **'65-**73 '70-54 '71-58 Nvcteola cinereana Neofabrea populi **65-**73 **'68-**49 Nycteola frigidana Neomyzaphis abietina **65-**73 '**66-**83 '65-101 '66-116 '67-116 '68-116 Nvctobia limitaria **'69-**104 '**70-**80 **'65-**12 **'67-**13 Neopeckia coulteri Nymphalis antiopa '66-104 '65-38, 72 '66-12, 25 '67-13, 24, Neophasia menapia 64 '**68-**13, 25, 85 '**69-**27, 78 '**71-'65-**99 **'66-**112 **'67-**113 **'68-**118 76 '**72-**15 **'71-**86 **'69-**105 **'72-**87 Oak leaf miners Nepticula sp. **'67-**64 **'68-**65 **'69-**63 **'70-**57 '**66-**39 '**67-**40, 62 Oak leaf-mining sawfly Nepticula turbidella **'67-**64 **'68-**66 **'68-**41, 66 **'69-**44 **'71-**44 Oak leaf roller Nepytia canosaria **'65-**24 **'66-**25 **'69-**27 70-24 **'65-**73 **'71-**44 **'72-**44 Oak leaf tier Nepytia freemani **'67-41 '68-42 '69-**45 '**71-**44, 61 **'65-**101 **'66-**116 **'67-**116 **'69-**105 '**72-**25, 43, 60 **'71-**86 **'72-**84 Oak skeletonizer Nepytia phantasmaria **'66-**40 **'67-41 '68-**65 '**69-**63 **'65-**101 **'66-**115 **'67-**116 **'71-**84 Oak sawfly '**72-**84, 88 **'68-42** Noctuid, A Oak slug, A **'67-**64 **'68-**42 **'69-**62 '**70-**40 **'66-**40 **'71-**40, 57 **'72-**78 Oak tier Northern pine weevil **'66-**39 **'65-**54, 55 **'66-**39, 58 **'67-**60 **'71-**Oak twig pruner 61 66-65 Notched-wing geometer Oak webworm **'71-**44 '**69-**27 '**71-**75 Nothophacidium abietinellum Oak wilt **'65-**78 **'66-**102 **'68-**92 **'71-**68 Nuclear polyhedrosis disease Oblique banded leaf roller '**70-**22, 23, 34 '**72-**23, 55 '**66-**40, 81 '**67-**41, 81 '**69-**45, 76 Nuculaspis californica Ocellaria ocellata **'65-**102 **'67-**72

Ocellate gall midge	Orsodacne atra
'66-40 '67-41 Ocnerostoma strobivorum	' <b>65-</b> 73 Orthosia hibisci
′ <b>71-</b> 63	' <b>66-</b> 83 ' <b>67-</b> 42, 82 ' <b>68-</b> 43 ' <b>69-</b> 45
Odontia bicolor '65-40	' <b>70-</b> 41 Otthia hypoxylon
Okanagana rimosa	<b>'67-</b> 85
'67-64 Olesicampe benefactor	Oystershell scale '69-105
' <b>70</b> -22, 69 ' <b>71</b> -22, 59, 74 ' <b>72</b> -22 Oligonychus ununguis	Oxydontia alboviride ' <b>67-</b> 49
'65-72, 84, 102 '66-100, 116 '67-82, 102 '68-86, 104, 118 '69-78, 89	Pachnocybe ferruginea '69-50
' <b>71-</b> 76 Operophtera bruceata	Pachybasium sp. ' <b>66-</b> 72
'65-21, 38, 56, 73, 85 '66-21, 38, 63, 83 '67-24, 39, 64, 82, 102 '68-25, 39, 86, 101, 118 '69-27, 43, 87 '70-	Pacific willow leaf beetle <b>67-</b> 116 ' <b>68-</b> 118
25, 38, 69 ' <b>71-</b> 26, 38, 76 ' <b>72-</b> 26, 38	Paleacrita vernata
Operophtera brumata '65-20 '66-21 '67-20 '68-21 '69-23 '70-22 '71-24 '72-26	'65-22, 56 '66-22, 65 '67-21, 64 '68-22, 43, 59 '69-27, 45 '70-25 '71-26
Ophionectria sp. '66-59	Pales weevil '65-54, 55 '66-58 '67-60 '71-61
Ophionectria cylindrospora '66-72 '67-72	Pandemis canadana ' <b>65-</b> 74 ' <b>66-</b> 79
Orangehumped mapleworm '70-39	Pandemis ribeana ' <b>65-</b> 103
Orangestriped oakworm '67-63 '70-57 '71-62 '72-60	Pannus torulosus '66-21
Orgilus coleophorae ' <b>70-</b> 14	Paraclemensia acerifoliella ' <b>65-</b> 57 ' <b>70-</b> 57
Orgyia antiqua '65-73 '66-12, 41 '67-13, 42 '68-	Paraphytomyza populicola ' <b>69-</b> 64
12, 42 <b>'69-</b> 13 <b>'70-</b> 14 <b>'71-</b> 14 <b>'72-</b> 15	Paratylenchus sp. '68-112
Orgyia antiqua badia ' <b>65-</b> 101 ' <b>67-</b> 116 ' <b>72-</b> 88	Paratylenchus aculentus ' <b>66-</b> 47
Orgyia leucostigma '65-25 '68-25 '69-26 '70-24	Paratylenchus projectus ' <b>66-</b> 47
' <b>71-</b> 24 ' <b>72-</b> 23	Pandemis canadana ' <b>68-</b> 86
Orgyia pseudotsugata '65-103 '66-116 '67-116 '68-118 '69-105 '71-84 '72-83	Parorgyia plagiata ' <b>65-</b> 74

Pestalotia maculiformans Pear slug 70-86 '**66-**98 '**67-**101 **'65-**38 Pestalotiopsis funerea Pegohvlemia sp. 71-29 **'66-**114 **'67-**101 '**68-**102, 117 Pestalozzina unicolor Pemphigus populitransversus '**65-**76 **'67-**82 **'68-**80 Petiole borer, A Penicillium sp. 66-64 **'70-**62 Petrova spp. Penicillium urticae **71-**41 **70-62** Petrova albicapitana Peniophora duplex '**65-**74 '**66-**40, 83 '**67-**42, 64, 82 **'67-**72 '**68-**25, 40, 63, 86 '**69-**27, 43, 64, 78, Pentatomid, A 89 '70-41 '71-41 '72-44 **'71-**63 Petrova comstockiana Pepper-and-salt moth **'67-**64 **'65-**72 **'66-**40, 81 **'67-**81 Perennial target canker of pine Pettit leaf roller '**68-**120 66-40 Peridermium spp. Pezicula acellata '**67-**67, 119 '**66-**86, 87 Peridermium balsameum Pezicula corni **71-**50 **'67-**85 **'68-**49 Peridermium harknessii Pezicula livida '**65-**40, 78, 86, 107 '**66-**44, 89, 119 '**66-**87 **'67-**27, 45, 90, 105 **'68-**29, 47, 68, 90, 106, 119, 121 '69-90 '70-71 Pezicula ocellata '**72-**77 **'71-**76 67-86 Peridermium stalactiforme Phacidium sp. **'66-**28, 102 **'67-**105, 117 65-14 '**68-**47, 106, 119 '**69-**31, 66, 81, 90 Phacidium abietis '**70-**60, 71 '**71-**45, 46, 64, 76 '**72-**65-42 '**66-**45 '**68-**75 '**69-**49 65, 77 Phacidium taxicolum Peridroma saucia '68-49 **'66-**65 **'68-**66 Peripheral stain Phaeocryptopus nudus **'66-**102 **'72-**81 Periphyllus negundinus Phaeoramularia maculicola **'67-**100 **'69-**80 **'70-**75 **'71-**79 Pestalotia corni Phaeaseptoria contortae **'66-**87 **'67-**85 **'70-**76 Pestalotia funerea Phaeostoma sphaerophila **'66-47 '67-72** '**72-**50 **'66-**28, 89 **'67-**28 Pestalotia laricicola Phalaenid, A **'66-**88 67-41 '68-42

Phantom hemlock looper Phomopsis sorbicola **'65-**101 **'66-**115 **'67-**116 **'71-**84 **'67-**85 **'72-**84, 88 Phomopsis strobi Phenacaspis pinifoliae **'65-**76 **'70-**61 **'65-**71 **'66-**25, 78, 116 **'67-**64, 82 Phragmortrichum karstenii **'68-**86 **'69-**15, 76 **'71-**14, 76 **'72-'65-**75 86 Phratora hudsonia Phialocephala repens **'67-**64 '**68-**66 **'65-4**0 Phryxe pecosensis **'70-**12 Phialophora sp. **'65-40** Phyllactinia corylea **'68-**89 **'67-**88 **'72-**50 Phialophora richardsiae **71-**50 Phyllactinia guttata **'65-**89 **'66-90** Phigalia titea Phyllobius oblongus **'70-**41 **71-**63 '**72-**62 Phlebia atkinsoniana Phyllocnistis populiella **'65-4**2 '**65-**74, 84, 101 '**66-**12, 41, 80, 99, Phlebia roumeguerii 115 '**67-**13, 24, 42, 82, 99, 115 '**68-'67-**49 43, 86, 104, 117 '**69-**89, 103 770-Phleospora aceris 70, 82 **'71-**86 **'72-**88 **'65-**27 **'66-**28 '**72-**47 Phyllocolpa spp. '66-83 Phobocampe sp. '**70-**12 Phyllocolpa sp. nr. agama Pholiota aurivella **'66-**83 **'65-1**07 Phyllocolpa sp. nr. nigrata **'66-**83 Phoma sp. **'70-**62 Phyllocolpa popuella **71-**44 Phoma acicola **71-**29 Phyllocolpa sp. nr. robusta Phoma glomerata **'66-**83 **'71-**68 Phyllophaga spp. '66-114 Phoma fumosa **'65-**75 **'67-**85 Phyllosticta spp. '**67-**47 '**68-**75 Phomopsis sp. '**65-**42, 105 **'66-**47 '67-44 Phyllosticta brunnea **'67-47** Phomopsis blight '**72-**66 Phyllosticta livida **'67-**87 Phomopsis depressa '65-75 Phyllosticta minima **'65-**14, 27 **'66-**28 '**68-**15 '**69-**17, Phomopsis lokoyae 69 '**70-**16 '**71-**16 '**72-**50 **'67-**118 Phyllosticta viridis Phomopsis juniperivora **'68-**92 '**72-**66, 92

Pine needle miner, A Physalospora miyabeana '65-85, 103 '67-117 '68-117 **'68-**29 **'67-**26 **'65-**27 **'66-**28 '**72-**30 **'70-**26 **71-**30 **'69-**33 Pine needle mite Physokermes piceae '**68-**66 '66-25 '70-25 '71-26 '72-26 Pine needle scale Phytagromyza populicola '**65-**71 '**66-**25, 78, 116 '**67-**64, 82 66-65 **'71-**44 '68-86 '69-15, 76 '71-14, 76 '72-Phytophaga rigidae 65-74 '66-83 Pine root collar weevil Pikonema spp. '**65-**57, 84 **'67-**60 **'66-**65 **'65-**70 **'66-**38, 76 Pine shoot moth Pikonema alaskensis **'67-41**, 64 '65-12, 25, 57, 70, 85 '66-12, 25, 38, 61, 76, 98 '67-12, 24, 40, 59, 79, 100, Pine spittlebug 116 '**68-**14, 25, 43, 61, 80, 101, 118 '65-57 '66-64 '67-63 '68-64 '69-15, 28, 45, 64, 75, 88 '70-14, 25, '**69**-63 '**70**-57 '**71**-60 '**72**-25, 61 41, 57, 70 '**71-**13, 26, 43, 44, 63, 76 Pine tortoise scale '**72-**14, 26, 44, 58, 76 '65-57, 74 '66-65, 83 '67-83 '68-Pikonema dimmockii 26, 43, 66, 86 '**69-**28 '**72-**62 **'65-**70 **'66-**12, 38, 76 **'67-**13, 40, 82 **'68-**43 **'69-**15, 45 **'70-**14, 42 **'71-**Pine webworm 14 '72-15, 44 '**67-**64 '**69-**78 Pill beetle Pine weevil, A **'67-**63 **'67-4**2 Pine blister rusts Pineus sp. **'68-**122 '**67-**117 Pine bud moth Pineus pinifoliae **'67-**64 **'68-**63 '**65-**23, 85 '**66-**25 '**67-**25 '**68-**25 Pine budworm **'69-**28 **'72-**26 **'67-**101 **'68-**103 **'69-**89 Pinkstriped oakworm Pine butterfly '**68-**84 '**71-**62 '**72-**43, 61 '65-99 '66-112, 113 '67-113 '68-118 **'69-**105 **'70-**86 **'72-**87 Pissodes sp. '68-104. 115 Pine engraver Pissodes affinis **'65-**102 **'66-**65 **'67-**60 71-61 Pine gall **'67-**48 Pissodes approximatus '**65**-54 '**66**-39, 58 '**67**-60 '**71**-61 Pine leaf aphid '**72-**26 Pissodes engelmanni '**65-**85 '**66-**99, 116 '**68-**115 Pine leaf chermes **'65-**23, 85 **'66-**25 **'67-**25 **'68-**25 Pissodes similis '**69-**28 **'65-**57 Pine needle cast Pissodes sitchensis **'66-**118 '65-100 '66-114 '67-113

Pissodes strobi Pollaccia radiosa '**65-**25, 49, 74 '**66-**58, 83 '**67-**42, '**65-**13, 27, 41, 59, 75, 88, 89 '**66-**13, 59, 80 '68-62, 86 '69-44, 62, 78, 28, 47, 68, 84 '67-14, 29, 49, 67, 83 102 '70-41, 55, 80 '71-44, 59, 84 **'68-**15, 67, 87 **'69-**50, 65, 79 **'70-**'**72-**26, 44, 59, 88 15, 59 '**71-**15, 69 '**72-**15, 67 Pissodes terminalis Pollaccia saliciperda **'65-**27 **'66-**28, 47 **'67-**26 **'68-**75, **'65-**85 **'66-**99, 117 **'68-**117 **'71-**76 92 '70-63 '72-70 Pitch nodule maker Polygraphus rufipennis **'66-**40, 83 **'67-**42, 64, 82 **'65-**74 '66-100 '**68-**25, 40, 63, 86 '**69-**27, 43, 64, 78, 89 '**70-**41 '**71-**41 '**72-**44 Polyhedral virus **'67-**110 **'68-**57 **'69-**43 **'71-**25, 82, Pitch twig moth 84 '**72-**40, 58, 83 **'67-**64 Polyhedrosis disease Pitted sap rot '**70-**23, 24, 81 '**71-**24, 38 **'65-42** Polyporus abieticola Pityokteines minutus **'71-**50 **'68-**104 **'69-**90 Polyporus abietinus **'65-42** Pityophthorus alpinensis **'65-**85 Polyporus anceps **'65-**42 Plagiodera versicolora **'71-**45 **'72-**62 Polyporus balsameus **'65-**40 **'72-**16 Plagodis alcoolaria Polyporus betulinus **'68-**59 '68-15 Plant bug, A Polyporus cuticularis **72-**26 **71-50** Platychora alni Polyporus frondosus **'67-**49 **'66-**72 Pleroneura borealis Polyporus pubescens '**65-**25, 27 '**66-**25, 62, 117 **'67-**25 **'68-**25 **'69-**28, 90 **'70-**25 **'71-**26 Polyporus minusculoides Pleurotus serotinus **'67-**72 '66-121 Polyporus schweinitzii **'71-**66 Plum pocket **'65-**63 **'67-**70 **'68-**76 '**68-**93 **'72-**64 Podosphaera clandestina Polyporus spraguei **'65-**30 **'66-**104 **'67-**72, 88 **'68-**89 71-50 Pollaccia sp. Polyporus spumeus var. malicola 71-51 65-74 Polyporus tomentosus Pollaccia elegans '**65-**40, 61 '**66-**34, 43, 70, 71 '**67-**'**65-**13, 59, 75 '**66-**13, 28, 68, 84 44, 70 '68-72 '69-49, 70 '70-44, **'67-**49, 67, 83 **'68-**15, 67, 87 **'69-**73 '71-66 '72-30, 47, 64, 65 '**71-**69 '**72-**17 65, 79 '**70-**63

Polyporus tomentosus var. circinatus Poria mappa 71-51 **'72-**47 **'65-**40 '**71-**47 Poria obliana Polyporus undosus '**67-**49, 92 **71-**51 Poria odora Polyporus versicolor 71-90 '**65-**107 Poria oleracea Polyporus volvatus 71-51 **71-**51 Poria subacida Poplar-and-willow borer **65-**83, 100 **66-**115 **'67-**116 **'68-**'68-122 '72-16 118 '**69-**90 **'70-**82 **'71-**86 Poria tsugina '65-107 Poplar blotch miner **'71-**63 Poria weirii '65-107 '67-121 Poplar borers **'69-**90 **'65-**84 **'66-**98 **'68-**104 Poria xantha Poplar bud-gall mite **71-**51 '65-72, 85 '66-80 '67-79 '68-80, Porthetria dispar 103 '**69-**75 '**71-**62, 75 '**72-**43, 76 **'65-**37 **'66-**37 **'67-**37 **'68-**39 '69-42, 64 '70-40, 57 '71-25, 41, Poplar gall mites **'65-**85 62 '72-24, 41, 60 Poplar leaf miner, A Potebniamyces balsamifera var. boycei **'66-**65 **'69-**64, 104 **'71-**44 **'70-**86 Poplar leaf roller, A Potebniamyces balsamicola '65-11, 55 '66-64, 100 '67-62 '68-'**67-**49, 118 '**68-**124 43, 66 '69-45 '70-42 '72-61 Potebniamyces coniferarum Poplar petiole gall aphid **'66-**121 **'68-**49 **'69-**50 **'67-**82 **'68-**86 Potebniamyces canker of alpine fir **'67-**118 '68-124 Poplar sawfly **'65-**38, 103 **'66-**41 '**71-**44, 45 Powdery mildew '66-48 '67-49, 72, 88, 105 '68-75, Poplar serpentine miner 89 '71-70 '72-50, 51 **69-**89 **'70-**70 - of alder '**65-**30, 89 Poplar shoot borer — of beech '**65-**30 **'68-**65 — of cherry '66-104 Poplar vagabond aphid — of horse-chestnut '65-30 66-82 **'67-**82 **'68-**85 **'69-**76 — of poplar **'65-43** Pragmopora pithya Porcupine damage '68-49 '66-42, 120 '70-45 '71-27 '72-27 Prairie tent caterpillar Poria sp. '**65-**71, 85 '**66-**82, 100 '**67-**80 **'68-**91 **'68-**104 **'69-**75, 89 **'72-**77 Poria cinerascens Pratylenchus sp. **71-**51 '68-122 Poria incrassata Pratylenchus penetrans **'67-**121 66-47

Premature leaf drop Pseudexentera cressoniana '**72-**57 **'65-**24 Prionoxystus macmurtrei Pseudexentera oregonana **'67-**64 '65-55 '66-64 '67-40, 62, 100 '68-43, 66 '69-45 '70-42 '71-40 '72-Priopoda nigricollis **72-**14 37, 77 Pseudomassaria corni Pristiphora erichsonii **'66-**87 **'67-**85 **'65-**10, 20, 36, 48, 67, 83, 97 **'66-**10, 20, 37, 56, 76, 98, 108, 112 '**67-**10, Pseudopacidium canker of spruce 19, 39, 56, 78, 100, 112 '**68-**12, 20, **'68-46** 40, 58, 81, 101, 115 '**69-**13, 22, 43, Pseudophacidium piceae 60, 74, 88, 102 '**70-**13, 21, 42, 54, **'68-**46, 47 **'69-**48, 50 68, 81 **'71-**12, 22, 45, 59, 74, 85 Psilocorsis faginella '**72-**13, 21, 44, 59, 77 **'67-**25 Pristiphora geniculata Puccinia bolleyana '65-12, 25, 53 '66-25, 41, 61 '67-**'67-**49, 72 25, 42 '**68-**14, 25, 43, 66 '**69-**15, 45, '**70-**14, 42, 57 '**71-**14, 27, 45, Puccinia coronata **'68-**29 63 '**72-**15, 44 Puccinia sparganioides Pristiphora lena '65-27 '66-27 '67-26 '68-29 '69-**'65-**12, 58 **'66-**12 **'67-**13 32 **'70-**28 **'72-**30 Prociphilus tessellatus Pucciniastrum spp. '**66-**41 '66-70 '67-45, 69 '68-68, 105 '69-Profenusa sp. 80 **'66-**65 Pucciniastrum americanum Profenusa lucifex '65-41 '72-92 **'67-**64 **'68-**66 Pucciniastrum articum Profenusa thomsoni '**66-**104 '**65-**37, 54 '**66-**25, 38, 62 '**67-**25, Pucciniastrum epilobii 38, 62 '**68-**38, 39, 64 '**69-**42, 64 **'65-**28, 60, 78, 87, 89, 105 **'66-**29, '**70-**37, 57, 70 '**71-**42, 63 '**72-**41, 69, 101 '**67-**27, 67, 90 '**68-**28, 68, 62 91 '**69-**17, 30, 65, 80, 106 '**70-**16, Prosthecium betulinum 44, 64, 72, 83 '71-70, 77, 87 '72-67-49 70, 78, 89 Prosthecium stylosporum Pucciniastrum goeppertianum **'67-**85 **'65-**78, 87, 89 **'66-**29, 101, 105 **'68-**28 '**69-**30, 81 **'67-**27, 121 Proteoteras willingana '**71-**29, 77 '**72-**15, 28 **′70-**27 '**65-**74 '**66-**83 '**67-**82, 102 '**68-**86 Pucciniastrum potentillae Protoboarmia porcelaria indicataria **'67-**105 **'65-**74 **'66-**83 **'67-**82 Pucciniastrum pustulatum Protolachnus agilis '65-13, 41 '66-13 '67-14 '68-14 **'70-**58 Pucciniastrum pyrolae Pseudexentera sp. **'66-1**05 **'65-**55

Ramularia stolonifera Pucciniastrum sparsum '66-85 '67-87 69-91 Rebentischia sp. Pucciniastrum vaccinii **70-**46 '65-89 '68-29, 75 '69-33 '70-28 Red hand disease Pulicalvaria martini **'65-1**05 **70-**58 Red helt Pulicalvaria thujaella '**66-**103 '**67-**103 **'70-**75 **'65-**24, 55 **'66-**24, 63 **'67-**24, 61 **'65-**88 '**71-**79. 88 '**72-**81, 90 '68-24, 40, 63 '69-27, 40, 62 '70-24, 35, 56 '71-44, 61 '72-24, 43, Red-breasted sapsucker 59 '66-118 Pullus impexus Red brown butt rot '**65-**19 '**66-**20, 110 '**65-**63 Pulvinaria innumerabilis Red flag of balsam fir **'69-**64 **'70-**58 **'67-**62 **'68-**64 '65-14, 29 '66-29 '67-14, 28 '68-'**70-**28 '**71-**29 Purple eye spot '**68**-15 '**69**-17, 69 '**70**-16 '**71**-16 Redhumped caterpillar Purple-striped spruce budworm **71-**24 '**70-**58 '**71-**63 Redhumped oak worm **'67-**83 Puto cupressi **'65-**102 **'66-**117 **'67-**117 **'68-**118 Redheaded jack pine sawfly '**65-**24, 38, 52 '**66-**24, 39, 41, 61 Pyralid moth '**71-**57 '67-23, 42, 58, 82 '68-25, 60 '69-39, 60, 64 '71-40, 58, 59 Pvrrhalta decora **'69-**78 **'70-**70 **'71-**14 '**72-**15 Red pine cone beetle '68-25 '72-61 Pvrrhalta luteola **'71-**27 Red pine cone worm Pyrrhia sp. 66-116 **'67-**64 Red pine mortality Pyrrhia umbra exprimens '**71-**67 **'65-**58 Red pine needle midge Pythium sp. '**67-**61 '**68-**64 **'68-**27 **'70-**85 Red pine needle mite Pythium debaryanum **'65-**56 **'66-**59 **'67-**60 65-41 Pythium ultimum Redheaded pine sawfly '**69-**108 **'65-**52 **'67-**42, 58 '**68-**25, 42, 60 **'69-**78 **'70-**34, 54 **'71-**58 **'72-**41, Rabbits 58 **'69-**14, 46 **'70-**45, 75 **'71-**80 **'72-**Red pine sawfly **'65-**53 '**66-**61 '**67-**58 '**68-**60, 85 Raffaelea sulcati 70-86 69-64 **'70-**36 **'71-**59 Ramularia rosea Red ray rot **'65-**76 **'67-**87 **'68-**92 **'69-**81 **'65-**42

Red ring rot ' <b>66-</b> 70 ' <b>71-</b> 69	Rhizosphaera pini ' <b>65-</b> 78 ' <b>67-</b> 89
Rehmiellopsis abietis '65-106	Rhizothyrium abietis '65-30 '68-75, 108 '69-69
Rehmiellopsis balsameae '65-14, 29 '66-30 '67-29 '72-30	Rhodotus palmatus '71-51
Rehmiellopsis betulina '65-89	Rhynchaenus rufipes ' <b>70-</b> 25
Resinosis of lodgepole pine '67-46	Rhyacionia sp. ' <b>68-</b> 27
Reticulitermes flavipes '66-64	Rhyacionia buoliana '65-12, 22, 38, 50, 98 '66-22, 41,
Retinocyclus abietis '66-42, 72, 89 '67-46, 92	59, 113 ' <b>67-</b> 21, 56, 114 ' <b>68-</b> 14, 22, 66, 116 ' <b>69-</b> 28, 64, 104 ' <b>70-</b> 25, 58, 22 ' <b>71</b> 27, 62, 85 ' <b>72</b> 26 44, 50, 86
Retinocyclus olivaceus '70-51	82 ' <b>71-</b> 27, 63, 85 ' <b>72-</b> 26, 44, 59, 86  Rhytisma acerinum
Retinodiplosis sp. '65-103	<b>'65-</b> 14, 30, 60 <b>'66-</b> 69 <b>'67-</b> 29, 47, 72 <b>'68-</b> 75 <b>'69-</b> 33, 69 <b>'70-</b> 28, 64
Rhabdocline pseudotsugae '65-104 '66-119 '67-103, 118	Rhytisma ilicis-canadensis '69-50  Phytisma punctature
' <b>68-</b> 105, 121 ' <b>69-</b> 94, 106 Rhabdocline weirii	Rhytisma punctatum '65-14, 30, 60 '66-66 '67-47, 72 '68-15, 75, 92 '69-69 '70-64 '72-
' <b>69-</b> 94, 106	47
Rhabdophaga strobiloides '65-74 '66-83	Rhytisma salicinum '65-14, 60, 78 '66-69, 90 '67-47,
Rhabdophaga swainei '65-22, 85 '66-20 '67-25, 100 '68-28, 90	72, 88 ' <b>68-</b> 75, 89 ' <b>69-</b> 81 ' <b>70-</b> 75 ' <b>71-</b> 80 ' <b>72-</b> 48, 70
Rhabdospora sp. '67-92	Ribbed petiole gall maker '69-45
Rhabdospora salicella	Rodent damage ' <b>71-</b> 68
′ <b>67-</b> 72	Root asphyxiation '67-43
Rhizina root rot '67-121 '68-119 '70-83 '71-77	Root collar weevil
Rhizina undulata '67-72, 121 '68-72, 119, 123 '69-	<b>'66-</b> 100 <b>'67-</b> 60 <b>'68-</b> 25, 104 <b>'71-</b> 15, 61 <b>'72-</b> 26, 61
33, 70 ' <b>70-</b> 46, 73, 83, 84 ' <b>71-</b> 77 ' <b>72-</b> 30, 70	Root feeding nematode '66-46-48
Rhizocalyx abietis	Root mortality of white spruce '66-44' '67-44
Rhizoctonia sp.	Root rots '65-40, 42, 88, 97 '66-43, 46, 121
' <b>68-</b> 27 Rhizoctonia solani	<b>'67-</b> 28, 44, 69, 91 <b>'68-</b> 72 <b>'69-</b> 33, 49, 70, 91, 93, 107 <b>'70-</b> 27, 43, 44,
' <b>72-</b> 30	46, 63, 73 ' <b>71-</b> 46, 47, 65, 66, 67, 77

Root weevil '65-10, 11	Salt damage '65-58 '66-68 '67-65 '68-116, 122 '70-29
Rose chafer '66-100 '72-61	Sap rot '70-15, 46 '71-15 '72-15
Rot '67-48, 49, 91, 92, 93, 104, 120, 121 '68-15, 72, 76, 123 '69-16, 17 '71-	Saperda sp. ' <b>66-</b> 89
50, 51 ' <b>72-</b> 16, 29, 30, 47, 48, 63, 70, 78	Saperda calcarata '65-84, 88 '66-98 '68-104 '69-90
Roughened bark '67-48 '69-50 '72-91	Saperda concolor '65-74 '66-83
Roundheaded borer '66-117 '67-114	Sapsucker damage '66-42 '67-43, 117 '69-46, 93 '70-45 '71-80 '72-27
Rusts '70-63, 71, 83 '71-45, 46, 47, 50, 64,	Sarcophaga aldrichi ' <b>65-</b> 35, 45, 69 ' <b>66-</b> 37
65, 69, 70, 76, 77, 78, 80, 87 ' <b>72-</b> 48, 65, 67, 80	Sarcotrochila alpina ' <b>71-</b> 87
Rust gall ' <b>68-</b> 107	Sarcotrochila balsamea ' <b>65-</b> 41, 63, 89 ' <b>68-</b> 75
Rust of bearberry '65-62, 88  — of black cottonwood '66-119  — of fern — of hawthorn — of juniper '67-71, 92 '68-74 '69- 70  — of Labrador-tea — of Saskatoon — of serviceberry — of spruce '67-118  - of spruce '67-118	Sarcotrochila piniperda '65-78 '66-30, 101, 102 '67-89 '68-92, 105  Satin moth '65-22, 37, 99 '66-9, 12, 23, 41, 116 '67-13, 22, 42, 115 '68-14, 23, 41, 118 '69-25, 46, 102 '70-23, 42 '71-24, 45 '72-15, 23, 44, 62, 87  Sawflies '65-72 '66-39, 40, 61, 81, 84 '67-42, 58, 115 '68-59, 84, 86, 102, 118 '69-44, 60, 78, 104, 105
Rusty pinecone moth '67-63	Sawfly, A '65-53, 58, 73, 74
Rusty tussock moth '65-73, 101 '66-12, 41 '67-13, 42, 116 '68-12, 42 '69-13 '70-14 '71-14 '72-15, 88	Sawyer beetle '67-82 '72-26 Scab '68-75
Saddleback looper '65-101 '66-40, 108, 115 '67-41, 116 '68-118 '69-100, 101 '70-80  Saddled prominent	Scale insect, A '67-63 '68-42 '69-45 '71-67 Scambus decorus '67-113
'67-61 '68-58 '69-44, 58 '70-24, 38, 39, 55 '71-24, 44, 62 '72-23	Schizoxylon microspermium '68-49

Sciaphila duplex Scolvtus multistriatus **'65-**25 **'66-**26, 83 **'67-**25, 82 **'68-**'65-54 '66-63 '67-60 '68-62 '69-43 '69-45, 64 '70-42 '71-40 '72-41, 63 '**70-**41, 54, 55 '**71-**61 '72-37 44 Sciniatosporium sp. Scolytus unispinosus **'66-**88 '65-103 Sciniatosporium verrucosum Scolvtus ventralis 69-108 '68-118 Scirrhia acicola Scytalidium lignicola **'65-**77 **'66-**88 '**69-**50 Scirrhia pini Scythropus sp. '**66-**118, 121 '**67-**105, 119 '**68-**121, **67-117** 122 '69-107 Scytinostroma galactinum Scleroderris spp. 72-65 **'67-**118 **'70-**46 Secondary needle parasite Scleroderris abieticola '**72-**91 **'66-**120 **'67-**85 Seedling diseases Scleroderris canker **'67-4**7 **'65-**62 **'66-**51, 66, 67, 72 **'67-**46, 69 Seedling mortality '**69**-66 '**70**-43, 61 '**71**-28, **'68-**70 65-41 46, 63 '**72-**28, 45, 62 Semi-mature tissue needle blight Scleroderris lagerbergii '**72-**30, 67 '65-54, 62 '66-51, 59, 66 '67-46, Semiothisa spp. 60, 69 '**68-**45, 46, 70, 71 '**69-**47, 66 **'65-**74 **'66-**83 **'70-**43, 61 **'71-**28, 33, 46, 47, 63, 72 Semiothisa bicolorata '**72-**28, 45, 62 **'65-**74 **'66-**83 Scleroderris laricina Semiothisa granitata **'68-**49 65-74 Sclerophoma sp. Semiothisa sexmaculata '**67-**118 **'65-**74 **'66-**83 **'68-**86 Sclerophoma ambigua Semiothisa signaria dispuncta '**72-**92 **'65-**74 **'66-**83 **'69-**46 Sclerophoma pithya Septobasidium pinicola **'67-**72 **'68-**76 **67-**49 Sclerophoma pithyophila Septogloeum gillii **'65-**107 **'67-**89, 92, 121 '**68-**75, 92 '**66-**102 '**71-**87 **'65-**85 **'70-**72 **'69-**68, 109 **'71-**88 '**72-**89 Sclerotinia kerneri Septogloeum rhopaloideum **66-**85, 103 **'67-**49, 103 **'68-**105 **72-**51 **'69-**93 **'71-**79 Scoleconectria cucurbitula '**67-**29, 46, 72, 92 '**68-**74, 76 '**69-**68 Septomyxa salicis **'71-**70 **'72-**70 66-87 **'70-**64 Septomyxa tulasnei Scolvtus mali **66-**72 **'68-**62

Septoria sp. ' <b>70-</b> 29	Shoot moth, A '65-73
Septoria alnifolia '65-76 '66-85, 105	Shoot rust of spruce '69-93
Septoria betulae ' <b>67-</b> 72 ' <b>68-</b> 49	Shot hole of cherry '65-13, 29 '66-30, 90 '70-76 '71-79 '72-29, 81
Septoria betulicola ' <b>65-</b> 76 ' <b>67-</b> 87 ' <b>71-</b> 79	Shrews '70-13 '71-13 '72-13
Septoria caraganae '65-76 '66-85, 105 '67-87 '68-88 '69-80 '70-75 '71-79 '72-80	Silverspotted tiger moth '65-102 '68-118 '72-88
Septoria carolinensis '65-76	Single tree mortality of balsam fir '72-67
Septoria cornicola ' <b>65-</b> 76	Sirococcus strobilinus '68-47 '70-43 '71-47 '72-51, 89
Septoria didyma '66-85 '67-87 '68-92	Sitka spruce weevil '65-100 '66-114 '67-113 '68-115 '69-102
Septoria musiva '65-76 '66-84 '67-47, 73, 87 '68- 88, 89 '69-80 '70-74 '71-79 '72-	Small leaf chafer '66-26
47 Septoria negundinis	Small mammals '70-55
<b>65-</b> 76 <b>68-</b> 93 <b>'71-</b> 79  Septoria populicola <b>'67-</b> 47 <b>'72-</b> 47	Smaller European elm bark beetle '65-54 '66-63 '67-60 '68-62 '69-41, 63 '70-41, 54, 55 '71-61 '72-
Septoria salicicola ' <b>65-</b> 76	44 Snow blight
Septoria sorbi ' <b>67-</b> 73	'67-48, 105 '68-75, 92 '69-49 — of balsam fir '65-42, 78, 89 '66-45 — of spruce '65-14
Septotinia populiperda '65-63 Serica tristis	Snow damage (and wind) '69-93 '71-30, 49, 89 '72-49, 55, 67
<b>'66-</b> 26	Snow mold
Setoptus jonesi '65-56 '66-59 '67-60	' <b>69-</b> 67 ' <b>72-</b> 68 Solenobia walshella
Seynesiella juniperi '66-85 '67-105 '68-108 '72-92	' <b>66-</b> 12 ' <b>67-</b> 13
Shelterbelt insects	Sooty mold of fir '67-104
'66-98 Shoot blight of balsam fir '72-49	Sorex cinereus cinereus '70-13 '71-13 '72-13
— of conifers '72-89 — of larch '68-123 '69-108	Southern pine engraver '65-57
— of spruce ' <b>72-</b> 69 — of western larch ' <b>66-</b> 119	Speckled tar spot '65-14, 30 '68-75

Sphaceloma murravae Spruce bud midge **'66-**85 '**65-**22, 85 '**66-**26 '**67-**25, 100 '**68-**25, 104 '**69-**28, 90 Sphaerographium fraxini **'72-**70 Spruce bud moths **'65-**10, 25, 38, 58 **'66-**11, 26, 38, 65 Sphaeronema pruinosum **'67-**19, 25, 42, 64 **'68-**26, 66 **'69-**′**67-**86 ′**71-**27 28, 46 '**70-**25 Sphaeropsis albescens Spruce bud scale **'65-**75 **'67-**85 **'66-**25 **'70-**25 **'71-**26 '**72-**26 Sphaeropsis nubilosa Spruce budworm **'68-**93 '**65-**10, 11, 18, 31, 38, 49, 50, 67, 68, Sphaerulina taxicola 80, 90, 97 '**66-**11, 12, 18, 19, 31, 34, **'67-**105 36, 51, 57, 77, 92, 95, 96, 106, 112 Sphyrapicus varius ruber **'67-**12, 18, 36, 52, 61, 98, 101, 102, '**66-**118 **'68-**13, 19, 37, 54, 55, 79, 99, **'69-**15, 21, 38, 39, 53, 54, 73, 100 Sphyrapicus varius varius 86, 100, 101 '**70-**20, 33, 34, 49, 50, **'69-**46 **'70-**45 58, 67, 68, 79 '**71-**7, 13, 20, 35, 37, Spilocaea sp. 38, 54, 55, 56, 59, 73 '**72-**11, 12, 20, '**68-**93 34, 37, 40, 54, 55, 74, 76, 83 Spilocaea pomi Spruce cone insects **'68-**75 **'68-**102 Spilochalcis albifrons Spruce coneworm '67-113 '70-81 '65-73 '66-81 '67-61, 81, 101 '68-Spiny elm caterpillar 65, 84 '**69-**27, 45, 77 '**70-**24 771-**'71-**76 **'72-**15 26, 44 '**72-**21 Sporidesmium deightonii Spruce gall aphid '**66-**86 **'67-**80, 117 Spotted pine aphid Spruce gall midge 70-58 '**68-**104 '**69-**89 Spotted tussock moth Spruce needle miner, A **'66-**82 **'67-**81 **'68-**85 **'70-**14 **'70-**58 Spring cankerworm Spruce sawflies '65-22, 56 '66-22, 23, 51, 65 '67-**'65-**12, 70 **'66-**12, 38, 76 '**67-**13, '**68-**22, 43, 59 '**69-**27, 45 21, 64 40 '68-102 '70-84 **'71-**26 **'70-**25 Spruce seed moth **Springtails '67-**100 **'71-**86 Spruce shoot rust Spruce aphid **'69-**93 **'66-**116 **'67-**116 **'68-**116 **'69-**104 Spruce spider mite **'70-**80 **'71-**86 '65-72, 84, 102 '66-100, 116 '67-Spruce bark beetle 82, 102 '68-86, 104, 118 '69-78, 89 **'66-**99, 100, 111 **'67-**101 **'68-**104 Spruce tip moth Spruce beetle **'65-**99 **'66-**114 **'67-**117 **'68-**118 '**65-**95 '**67-**24, 101, 111 '**68-**99, 113 Spruce weevil **'69-**27, 85, 98, 104 **'70-**69, 77, 78 **'71-**84 **'72-**88 **'70-**80 **'68-**115 '**71-**74, 75, 82 '**72-**25, 43, 76, 86

Spruce wood borer '69-104	Storm damage '65-25 '66-26 '68-29 '70-62 '71-30
Squirrels ' <b>69-</b> 47 ' <b>72-</b> 50	Strawberry root weevil . ' <b>66-</b> 64, 97 ' <b>70-</b> 14
Stain '69-50 '70-46 '71-50, 51  Stalactiform blister rust	Striped alder sawfly '65-24 '67-13, 116 '68-13 '69-15,
' <b>67-</b> 105, 117 ' <b>68-</b> 119 ' <b>69-</b> 90 ' <b>70-</b> 71 ' <b>71-</b> 64, 76 ' <b>72-</b> 77, 90	77 ' <b>70-</b> 14 ' <b>71-</b> 25, 61 Striped ambrosia beetle ' <b>67-</b> 115 ' <b>68-</b> 104
Steccherinum septentrionale '65-30	Sugar maple borer '71-44
Steganosporium muricatum ' <b>67-</b> 84 ' <b>71-</b> 51	Sulfur dioxide (SO <sub>2</sub> )
Steganosporium ovatum '67-73 '69-50, 68 '72-70	<b>'65-</b> 74, 105 <b>'71-</b> 27, 28, 89 <b>'72-</b> 27, 50, 91
Steganosporium pyriforme '66-45	Sunscald ' <b>65-</b> 39
Stem and branch rusts of pine '67-45, 67, 90 '68-27, 47, 90, 106 '69-31, 68, 80, 90 '70-44, 71 '71- 45, 76 '72-77, 90	Swaine jack pine sawfly '65-35, 52 '66-36, 49, 61 '67-36, 64 '68-66 '69-40 '70-36, 54 '71-58 '72-40, 58
Stem cankers '65-62, 89 Stem rust of bilberry '65-89	Sweetfern blister rust '65-63 '66-70, 105 '67-67, 91 '68-27, 69 '69-66, 90 '70-59, 71 '71-29 '72-78
— of cranberry ' <b>65-</b> 89 — of pine ' <b>65-</b> 40, 86 ' <b>66-</b> 28, 44, 102	Sydowia polyspora ' <b>68-</b> 50 ' <b>70-</b> 86 ' <b>71-</b> 90
Steremnius carinatus '65-101	Symmerista albicosta ' <b>67-</b> 83
Stereum cinerascens '70-46	Symmerista leucitys ' <b>70-</b> 39
Stereum sanguinolentum '65-107 '66-44, 118 '67-117 '72-	Systremma acicola ' <b>65-</b> 77 ' <b>68-</b> 93
16 Sternochetus lapathi	Tachinid fly, A '65-50 '71-11
'65-83, 100 '66-115 Stigmina glomerulosa '68-93	<i>Taphrina</i> spp. ' <b>67-</b> 29 ' <b>68-</b> 29 ' <b>69-</b> 33 ' <b>70-</b> 29
Stigmina negundinus '65-75 '67-73, 85	Taphrina amentorum '66-90 '67-92 '68-93
Stilpnotia salicis '65-22, 37, 99 '66-12, 23, 41, 116	Taphrina caerulescens '65-27, 42 '66-27 '71-51
<b>'67-</b> 13, 22, 42, 115 <b>'68-</b> 14, 23, 41, 118 <b>'69-</b> 25, 46, 102 <b>'70-</b> 23, 42 <b>'71-</b> 24, 45 <b>'72-</b> 15, 23, 44, 62, 87	<i>Taphrina carnea</i> ' <b>65-</b> 27, 43 ' <b>66-</b> 27 ' <b>67-</b> 49 ' <b>69-</b> 51 ' <b>71-</b> 51

<i>Taphrina confusa</i> ' <b>65-</b> 14 ' <b>66-</b> 30	Tethida cordigera ' <b>67-</b> 13
Taphrina dearnessii '65-27 '66-27	Tetralopha aplastella ' <b>71-</b> 57
Taphrina flava ' <b>69-</b> 109	Tetralopha asperatella '65-74 '66-83
Taphrina flectens '68-124	Tetralopha robustella '67-64 '69-78
Taphrina johansonii ' <b>72-</b> 51	Tetrastichus sp. '70-35
Taphrina letifera ' <b>65-</b> 30	Tetropium spp.
Taphrina nana ' <b>69-</b> 109	'67-114  Tetropium cinnemopterum
Taphrina populina '65-14'71-51	'66-117 '69-104  Tetropium cinnamopterum parvulum '68-101
Taphrina pruni ' <b>68-</b> 93	Tentylenchus sp.
Taphrina robinsoniana '65-14, 30 '66-14, 30 '67-29	Thecodiplosis piniresinosae '67-61 '68-64
Taphrina tosquinetii '66-30	Thelephora terrestris '67-47 '68-122 '70-29 '71-90
<i>Taphrina wiesnerii</i> <b>'65-</b> 30 <b>'69-</b> 51	Thera juniperata '66-65
Tar spot of alder '67-49	Therrya fuckelii ' <b>67-</b> 73 ' <b>68-</b> 76
— of birch '65-89 '66-90 '67-88 '68-74 '69-93 — of hazel '68-92	Thrips ' <b>72-</b> 62
— of holly ' <b>69-</b> 50 — of maple ' <b>65-</b> 14,30,60 ' <b>66-</b> 51,69	Thyriopsis halepensis '65-43 '67-105 '69-94
'67-29, 47, 72 '68-15, 75, 92 '69-33, 69 '70-	Thyronectria balsamea '66-42 '67-46, 92
28, 64 — of poplar '68-89 — of willow '65-14, 60, 78 '66-51,	Thysanoptera ' <b>72-</b> 62
69, 90 '67-72, 88 '68- 29, 75 '70-75 '71-80 '72-70	Tip blight '65-14, 29, 105, 106 — of alpine fir '66-120
Tea-break disease '67-121	— of balsam fir  '66-30 '67-29 '68-15, 28, 107 '69-32 '72-30
Tent caterpillars '70-39	— of cedar
Tenthredinidae '65-103	— of larch — of pine '67-121 — of pine '67-72, 121

'71-47 '72-51 **'65-**63 - of western hemlock '66-120 Tryblidiopsis sp. 70-46 Tip necrosis of Douglas-fir 70-84 Tryblidiopsis pinastri 69-81 Top dying **'70-**62 **'71-**67 '**72-**68 Trypodendron sp. 68-104 Top-dying of yellow birch Trypodendron lineatum **'66-**34, 42, 43, 50 **'67-**44 68-44 67-115 '68-104, 117 '70-81 '71-Top killing **'72-**86 '**72-**83 Tubercularia nigricans Tortricid moth, A '**67-**73 **'66-**79 **'65-**74 Tubercularia ulmea '66-43 '67-84, 85, 86 '68-93 '69-Tortricid on oak, A '65-57 '66-64 '67-63 '68-64 '69-63 Tubercularia vulgaris 70-64 Toumevella numismaticum **'65-**58, 74 **'66-**65, 83 **'67-**83 '68-Tuberculariella ambrosiae 26, 43, 66, 86 '**69-**28 **'70-**25 772-65-107 62 Tuberculina maxima '**65-**86, 107 '**66-**105, 121 '**69-**90 Trametes odora '70-71 '72-78 '67-93 Tubulicrinis angustus Tranzschelia pruni-spinosae 67-49 **'65-**63 '**67-**93 Tussock moth Trichiocampus viminalis 72-84 **'66-**41 **'65-**38 **'67-**42 '71-45 Twig and shoot blight Trichiosoma triangulum '**71-**69 '**72-**69 '65-74 '66-84 **'68-**86 Twig blight and dieback Trichocladium canadensis 71-69 72-69 71-51 Twig blight of spruce Trichoderma viride **'65-**63 **'66-**89 Twig canker Trichothecium roseum **'66-72 '66-**89 '**67-**73 - of horse-chestnut '65-30 — of willow '**65-**63 Trimmatostroma salicis '**65-**75 Twig fungus 70-46 Trisetacus sp. '71-50 - of mountain-ash '65-30 Trisetacus alborum Twig gall rust **'68-**66 71-69 Tritneptis klugii Twig midge of ponderosa pine '66-112 '67-113 '**65-**103

Trunk rot

'68-47 '70-43

— of spruce

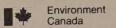
Two-year cycle spruce budworm Uncinula adunca = U. salicis'69-89 '70-70, 79 '71-75, 82 '72-**'66-**48 83 Uncinula flexuosa Tylenchorhynchus sp. **'65-**30 '66-47 Uncinula salicis Tylenchus emarginatus '**67-**49, 88, 105 '**68-**75, 89 **'65-**42 **'66-**48 '**68-**122 **'71-**70 **'72-**51 Tympanis sp. *Uredinopsis* spp. **'67-**46 **'69-**48 '**70-**27 '**71-**29, 87 Tympanis abietina Uredinopsis macrosperma **'68-**50 **'66-**48 Tympanis alnea Uredinopsis osmundae **'65-**75 **'67-**84 '**69-**79 **'65-**30 Tympanis confusa Uredinopsis struthiopteridis '**68-**50 **'68-**29 Tympanis conspersa Valsa sp. **'67-**86 **'65-**75 **'66-**42 **'67-**84, 89, 119 Tympanis hypopodea Valsa abietis **'66-**90 **'68-**35, 46 '**69-**48, 69 '**69-**68 Valsa ambiens Tympanis laricina **'66-4**3 **'66-**72 **'67-**86 Valsa cankers Tympanis mutata **'68-**46, 71 **'70-**45 **'67-**84 Tympanis piceana Valsa ceratophora **'65-**63 '68-50 Valsa cincta Tympanis pinastri '**71-**70 **'66-**87 **'69-**69 Valsa friesii Tympanis pithya **'68-**46 ′**70-**45 **'71-**47 **'72-**49 '**68-**50 Valsa insitiva Tympanis prunicola **'67-**73 '**68-**50 **'67-**85 Tympanis salicina Valsa kunzei **67-**86 **'68-**71 **'69-**69 Tympanis spermatiospora Valsa kunzei var. piceae **'67-**84 **'69-**79 **'65-**78 Tympanis truneatula Valsa pini '**69-**79 66-87 **'67-**93 **'68-**50 '**68-**50, 74, 76 '**69-**69 '**70-**64 '**71-**Tympanis tsugae 70 **'68-**50 Valsa silacina Uglynest caterpillar **'65-**63 **'68-**50 '**65-**24, 36, 57, 72 '**66-**24, 38, 81, 98 Valsa sordida '67-23, 40, 81, 101, 116 '68-24, 41, '67-105 '69-65 42, 84, 103 '**69-**26, 42, 76, 88, 105 Valsella furva '**71-**26, 43, 75 '**72-**25, **'70-**24, 39 **'66-**86 43, 76

Walnut caterpillar Valsella salicis **'68-**59 '**69-**63 66-64 **'67-**63 **'68-**50 72-61 Variegated cutworm Wandering sawfly '**66-**65 '**68-**66 · '66-116 Vasates quadripes '66-41 '72-44 Warren's collar weevil **'66-**116 **'68-**98, 102 Venturia sp. Wehmakers **'72-**90 **'65-**73 **'66-**83 Venturia inaequalis **'65-43** Weevil, A **'65-**57, 73, 101 **'66-**82 Venturia macularis '69-33, 92 '70-29, 74 '71-78 '72-Western balsam bark beetle **'65-**98 **'66-**114 **'67-**116 '**68-**116 30, 80 **'69-**102 **'70-**79 **'71-**84 **'72-**85 Venturia populina '65-59, 89, 107 '66-69, 84 '67-83. Western blackheaded budworm 103 '**68-**117, 120 '**69-**79, 92, 106 '72-82 '**70-**74, 83 '**71-**78, 87 Western dwarf mistletoe Venturia saliciperda 67-120 '**68-**29 '**69-**33, 51 '**70-**26 '**71-**30 Western false hemlock looper **'72-**30 **'71-**86 **'72-**84 Venturia tremulae Western gall rust **'65-**107 **'66-**105 **'67-**103 **'68-**29. **65-**78 **'66-**119 **'67-**90, 105 **'68-**50, 120 '**72-**51 Verticillium abietina Western hemlock looper **'65-4**0 '65-99 '66-113 '67-114 '68-115 Verticillium albo-atrum **'69-**13, 101 **'70-**79, 80 **'71-**84, 85 **'68-**87 **'69-**49, 70 **'72-**84 Western oak looper Verticillium cyclosporum 69-13 '68-93 Western tent caterpillar Verticillium dahliae '65-38, 52, 85, 102 '66-63, 100 '67-**'67-**84, 93 **'68-**87 **'69-**49 64, 110 '68-42, 65, 116 '69-42, 78, Verticillium tenuissimum 103 '70-30, 81 '71-43, 85 '72-42, **'67-**93 88 Verticillium wilt White grubs **'65-**43 **'69-**49, 70 **'72-**81 66-114 White heart rots Virus disease **65-**89 **'72-**50 **'71-**42, 82 '**72-**38, 41, 42, 83 Whitemarked tussock moth Virus spray **'65-**25 **'68-**25 **'69-**26 **'70-**24 **'68-**60 '**71-**24, 32 '**72-**23 Walkingstick White pine blister rust **'68-**65 '**65-**13, 28, 42, 61 '**66-**13, 18, 28, 45, Wallrothiella arceuthobii 66 '**67-**14, 27, 45, 67 '**68-**15, 45, 69 **'65-**86 **'66-**102 **'67-**105 **'68-**90 **'69-**17, 47, 94 **'70-**16, 44, 63, 71 **'70-**72 **'71-**87 '**71-**46, 64 '**72-**45, 78, 90

White pine cone beetle, A '67-116	Winter damage '65-105 '69-46 '70-84 '71-80
White pine needle blight '65-28 '66-29 '67-29, 44 '68-29 '69-33 '70-29 '71-30	Winter drying '71-30, 49, 68, 88 '72-17, 27, 49, 68, 90
White pine sawfly '66-25 '67-24 '71-63 '72-62 White pine shoot borer '65 50 '69 50	Winter drying of conifers  '65-13, 25, 39, 58, 88 '66-26, 42, 67, 95, 103 '67-25, 43, 65, 103 '68-26, 43, 73, 107, 121, '69, 23, 93, '77, 20, 121, '69, 23, 93, 177, 20, 121, '69, 23, 93, 177, 20, 121, 121, 121, 121, 121, 121, 121,
'65-50 '66-59 White pine weevil	43, 73, 107, 121 <b>'69-</b> 33, 93 <b>'70-</b> 29, 42, 62, 84
<b>'65-</b> 25, 49, 74 <b>'66-</b> 58, 83 <b>'67-</b> 42, 59, 80 <b>'68-</b> 62, 68 <b>'69-</b> 44, 62, 78, 102 <b>'70-</b> 41, 55 <b>'71-</b> 59 <b>'72-</b> 26, 44, 59	Winter moth '65-20, 21, 22 '66-18, 21, 22 '67-20 '68-18, 21, 22 '69-23 '70-22 '71- 24 - '72-26
White spongy rot '65-42	Winthemia occidentis ' <b>70-</b> 12
Whitestriped forest looper '66-115 '67-116	Witches' broom ' <b>70-</b> 72, 76 ' <b>71-</b> 80 ' <b>72-</b> 69, 81
White trunk rot '72-16, 50, 81	— of black cherry <b>'65-</b> 30 — of cherry <b>'69-</b> 51
Willow beakedgall midge '65-74 '66-83	— of fir '69-70 — of pine '69-70 — of Saskatoon '67-91 '68-91
Willow blight '65-27 '66-28, 47 '67-26 '68-29,	69-93 — of spruce 69-49, 70, 81
75, 92 <b>'69-</b> 33, 51 <b>'70-</b> 26, 63 <b>'71-</b> 30 <b>'72-</b> 30	Wood borers '68-101
Willow blotch miner '71-62 '72-62	Wood stain of balsam fir
Willow conegall midge '65-74 '66-83	'67-49 Woolly elm aphid
Willow leaf beetle '65-11, 102 '66-12, 99, 116 '67-12	<b>'66-</b> 18 <b>'67-</b> 81, 100 <b>'68-</b> 85, 104 <b>'69-</b> 75, 89
<b>'68-</b> 13 <b>'69-</b> 15 <b>'70-</b> 14 <b>'71-</b> 14 <b>'72-</b> 14, 62	Xenomeris abietis ' <b>69-</b> 109
Willow leaf miner '65-84 '67-80, 102	Xiphinema americanum ' <b>68-</b> 122
Willow sawfly '65-54 '68-85	Xiphinema bakeri '68-122 '69-107 '70-84 '71-87
Wilt '70-62 '71-68	<i>Xylococculus betulae</i> ' <b>65-</b> 25 ' <b>71-</b> 63, 67
Wind damage '68-44, 122 '69-68, 93 '70-62 '71-27, 68 '72-67	Xylococculus sp. '65-25
Winter browning '72-81	Yellow-bellied sapsucker '72-50

Zeiraphera canadensis Yellowheaded spruce sawfly '**67-**25, 64 '**68-**26, 66 '**69-**28, 46 '65-12, 25, 57, 85 '66-12, 25, 38, 61, '71-27 '72-26 76, 98 '**67-**12, 24, 40, 59, 79, 100, 70-25 116 '68-14, 25, 43, 82, 101, 118 Zeiraphera destitutana '**69-**15, 28, 45, 64, 75, 88 '**70-**14, '70-58 '71-63 25, 41, 57, 70 '**71-**13, 26, 43, 76 Zeiraphera diniana '**72-**14, 26, 44, 58, 76 '68-104 Yellownecked caterpillar Zeiraphera fortunana '67-63, 116 '68-59 '69-77 '72-61 67-102 Yellow witches' broom Zeiraphera improbana **'66-**89 **'68-**69, 91 '**70-**46, 63, 76 '67-115 '68-118 '70-58 '71-14, 63 '**71-**16, 29, 47, 48, 69, 77 '**72-**50, 78 72-15 - of balsam fir '65-14, 28, 78, 89 Zeiraphera ratzeburgiana '**66-**14, 30, 45, 70 '65-10, 25, 38, 58 '66-11, 26, 38, 65 '67-14, 28, 48, 72, 91 **'67-42**, 64 '68-47 '69-32 Zele sp. — of Douglas-fir'67-118 70-12 - of fir '67-105 '65-13, 62, 77 '66-Zelleria haimbachi — of spruce '65-103 '67-117 '68-117 30, 103 '**67-**70, 91 '68-47 Zeugophora sp. '66-80 Zale galbanata '68-66 Zeugophora scutellaris '68-83 '69-78 '70-70 Zeiraphera spp. '**66-**26, 114 '**67-**117 Zimmerman pine moth '**65-**25, 99 '68-26, 118 '69-28 '70-25 '71-27 65-57 '66-64 '67-61 '68-65 72-26 70-57





onment Environnement da Canada

Forestry Service Service des Forêts